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ANTHROPOLOGICAL INSTITUTE

OF

GREAT BRITAIN AND IRELAND.

NOVEMBER 11TH, 1879.

EDWARD B. TYLOR, Esq., D.C.L., F.R.S., *President, in the Chair.*

The minutes of the last meeting were read and confirmed.

The Election of four new Members was announced—ALFRED TYLOR, Esq., F.G.S., Baron A. VON HÜGEL, Captain R. C. TEMPLE, GEORGE W. BLOXAM, Esq., M.A., F.L.S.

The following presents were announced, and the thanks of the meeting were voted to the respective donors:—

FOR THE LIBRARY.

From the MUSEUM.—Report of the Peabody Museum of American Archæology and Ethnology. Vols. I. and II.

From the EDITOR.—Matériaux pour l'histoire de l'homme, Nos. 1–5.

From the GOVERNMENT OF VICTORIA.—The Aborigines of Victoria. Vols. I. and II. By R. Brough Smyth.

From the SOCIETY.—Proceedings of the Royal Geographical Society. Vol. I, Nos. 7–11.

From the EDITOR.—Index Medicus. Vol. I, No. 5.

From the STATE BOARD OF HEALTH OF MASSACHUSETTS.—Tenth Annual Report, 1879.

From the AUTHOR.—Sun Pictures of Rocky Mountain Scenery. By Prof. Hayden, M.D.

From Prof. F. V. HAYDEN.—Birds of the Colorado Valley. By Elliott Coues. Part I., 1878. U. S. Geological and Geographical Survey of the Territories, 1876. Bulletin and Geographical Survey of the Territories. Vol. IV, Nos. 3 and 4.

From the INSTITUTION.—Report of the Smithsonian Institution, 1877.

From the INSTITUTION.—Smithsonian Miscellaneous Collections. Vols. XIII, XIV, and XV.

From the ASSOCIATION.—Proceedings of the Central Ohio Scientific Association. Vol. I, Part I.

From the COMMISSION.—First Report of U. S. Entomological Commission for 1877.

From the ASSOCIATION.—Proceedings of the American Association for the Advancement of Science, 1877.

From the SOCIETY.—Proceedings of the Royal Society. Vol. XXIX, Nos. 196, 197.

From the SOCIETY.—Bulletin de la Société Impériale des Naturalistes de Moscow, No. 4, 1878, No. 1, 1879.

From the BERLIN ANTHROPOLOGICAL SOCIETY.—Zeitschrift für Ethnologie, No. 2, 1879.

From the SOCIETY.—Bulletin de la Société de Borda a Dax, No. 2, 1879.

From the EDITOR.—The American Antiquarian. Vol. I, No. 3, 1879.

From the INSTITUTION.—Journal of the Royal United Service Institution, Vol. XXIII, Nos. 100 and 101. Appendix to Vol. XXII.

From INDIA OFFICE.—Buddha Gaya, the Hermitage of Sákya Muni. By Rájendralála Mitra, LL.D.

From the ASSOCIATION.—The Journal of the Royal Historical and Archæological Association of Ireland. Vol. V, No. 37.

From the SOCIETY.—Mittheilungen der Anthropologischen Gesellschaft in Wien. Band VIII, Nos. 5 and 6; Band IX, Nos. 1-3.

From the INSTITUTE.—Proceedings of Royal Colonial Institute. Vol. X.

From the SOCIETY.—Transactions of the Asiatic Society of Japan. Vol. VII, Part 3.

From the SOCIETY.—Bulletin de la Société d'Anthropologie de Paris. Vol. II, No. 2.

From Dr. PAUL BROCA.—Revue d'Anthropologie, No. 3, 1879.

From the ACADEMY.—Bulletin of the Royal Academy of Copenhagen, Nos. 2 and 3, 1875; No. 1, 1876.

From the AUTHOR.—Finska Kranien. By Prof. Gustav Retzius.

From the SOCIETY.—Proceedings of the Royal Society of Tasmania for 1877.

From the EDITOR.—Revue Scientifique, Nos. 1-19, 1879; and 40 and 42, 1873.

From the ASSOCIATION.—Association Français pour l'avancement des Sciences, Nos. 22 and 23.

Viestuik hrvatskoga Arkeologickoga Druztva, Godina I, Br. 1 and 2.

Jahres-bericht des Naturhistorischen Nereins von Wisconsin, 1878-9.

Literarische Mittheilungen der Akademie der Wissenschaften in Krakau. January, February, March, 1879.

From the Society.—Proceedings of the Asiatic Society of Bengal, Nos. 2, 3, and 4, 1879.

From the Society.—Journal of the Asiatic Society of Bengal, Parts 1 and 2, Nos. 222-3-4.

From the Editor.—Revue Internationale des Sciences, Nos. 7–10, 1879; No. 22, 1878.

From the Society.—Transactions of the Society of Biblical Archæology. Vol. VI, Part 2.

From the Author.—Notices sur le Manuel de Voyageur, Juin, 1879. By D. Kaltbrunner.

From the Society.—List of Society of Antiquaries of London, 12 June, 1879.

From the Society.—Proceedings of the Numismatic and Antiquarian Society of Philadelphia, 20 March, 1879.

From the Author.—Signes Runiques a l'age des Celtes. By J. Park Harrison, Esq.

From the Author.—Betrothals and Bridals. By W. T. Marchant.

Offenbacher Vereins für Naturkunde, 17 and 18, Bericht.

From Prof. Hayden.—Bulletin of U. S. Geological and Geographical Survey. Vol. V, No. 1.

From Prof. Hayden.—Catalogue of Publications of U. S. Geological and Geographical Survey to December, 1878.

From the Author.—Mason's Marks. By H. Rivett-Carnac, Esq.

From the Author.—Anglo-Israelism Refuted. By R. Roberts.

Moniteur des Consulats, No. 1.

From the Society.—Journal of the Society of Arts, Nos. 1396 to 1407.

From the Society.—Leeds Philosophical and Literary Society, Annual Report for 1878-9.

From the Academy.—Atti della R. Accademia dei Lincei. Vol. III, Fas. 7°.

From the Academy.—Bulletin de l'Académie Impériale de St. Petersbourg. Tom. 25, Fenil. 21-32.

From the Academy.—Pamietuik Academii, Umiejetuosci W. Krakowie, 1878.

From the Manx Society.—Church Notes, Diocese of Sodor and Man. Vol. XXIX. By W. Harrison.

From the Editor.—"Athenæum," Nos. 620, 621, 622.

From the Society.—Schriften der Physicalisch-ökonomischen Gesellschaft zu Könisberg, 1877, II; 1878, I, II; 1879, I.

From the Society.—Proceedings of the Royal Asiatic Society. Vol. XI, Part 3.

From the Editor.—Archiv für Anthropologie, July, 1879.

From S. E. M. le President.—Compte-rendu de la Commission Impériale Archéologique pour l'année 1876. Avec un atlas.

From Prof. Agassiz.—Bulletin of the Museum of Comparative Zoology at Harvard College, Mass.

From the Editor.—Bulletin du Mouvement Social.

From the Academy.—Rozprawy i Sprawozdania z Posiedzen. Tom. V, 1878.

From the ACADEMY.—Sprawozdanie Komisyi Fizyjografieznéj, 1877.
From the ACADEMY.—Zbior Wiadomosci do Antropologii Krajowéj. Tom. III.
From the EDITOR.—Tijdschrift voor indische Taal-Land-en Volkenkunde, XXV, 2.
From the SOCIETY.—Notulen van de Algemeene en Bestuurs-Vergaderingen, XVI, 3, 4.
From the SOCIETY.—Journal of the Royal Geographical Society. Vol. XLVII, 1878.
From the ACADEMY.—Atti della R. Accademia della Scienze di Torino. Vol. XIV, Disp. 6 and 7.
From the ASSOCIATION.—Proceedings of the Geologists' Association. Vol. VI, Nos. 1, 2, and 3.
From the SOCIETY.—Transactions of the Royal Society of Literature. Vol. XII, Part 1.
From the EDITOR.—"Nature," Nos. 512–523.
From the EDITOR.—Revue Belge de Numismatique, 1879, Part 4.
From the ROYAL ACADEMY OF COPENHAGEN.—Oversigt over del Kongelige Danske Videnskabernes Selskabs, 1879, No. 2.
From the AUTHOR.—The Cause of Colour among Races. By William Sharpe, M.D.
From the COUNCIL OF ROYAL COLLEGE OF SURGEONS.—Catalogue of Osteological Specimens in the Royal College of Surgeons' Museum. Part 1, Man. By Prof. W. H. Flower.
From the SOCIETY.—Transactions and Proceedings of the Royal Society of Victoria. Vol. XV.
From the EDITOR.—Revue d'Anthropologie. Vol. XII, Part 4, 1879.
From the SOCIETY.—Verhandlungen des Naturhistorisch Medicinischen Vereins zu Heidelberg.
From the SOCIETY.—Proceedings of the Society of Biblical Archæology, November, 1878, to June, 1879.
From the ASSOCIATION.—Report and Transactions of the Devonshire Association for the Advancement of Science. Vol. XI.
From the AUTHOR.—Geology of the Provinces of Canterbury and Westland, New Zealand. By Dr. Julius Von Haast.
From Miss BUCKLAND.—On the Origin of some American Indian Tribes. Extracted from the "Canadian Naturalist." By John Campbell, M.A.
From the AUTHOR.—Psychometric Experiments. By Francis Galton, F.R.S.
From the AUTHOR.—Dí Alume Notizie riguardanti gli Organi Genitale Femminii Esterni. By D. P. Riccardi.
From the AUTHOR.—Il Culto dell' acqua-Studii intorno alla Scienza della Religiosita. By D. P. Riccardi.
From the AUTHOR.—Litolatria. By Dott. P. Riccardi.
From the AUTHOR.—Studii intorno ad alumni crani Araucanos e Pampas. By Dott. P. Riccardi.
From the AUTHOR.—Mélange de Géographie et d'Ethnographie. By M. le vicomte Flouriot de Langle.

From the AUTHOR.—De la Notion de Race en Anthropologie. By M. Paul Topinard.

From the SOCIETY.—Proceedings of the Society of Antiquaries of London. Vol. VII, No. 6.

From the Executors of Sir WALTER TREVELYAN, Bart. :—

Adam, Alexander—Principles of Latin and English Grammar.
Ainsworth, Robert—Thesaurus Linguæ Latinæ Compendiarius. (2 copies.)
Bailey, N.—English Dictionary. (2 copies.)
Barlow, Peter—Mathematical Dictionary.
Bay, Christian Frederick—English-Danish Dictionary. 2 vols.
Bayle, Mr. Peter—Historical and Critical Dictionary. 5 vols.
Boudot, J.—Latin-French Dictionary.
Boyer's Royal Dictionary. (2 copies.)
Cooper, J.—Thesaurus Linguæ Romanæ et Britannicæ.
Eton Greek Grammar.
Grose, Francis—Dictionary and Glossary.
Hedericus, Benjamin—Greek Lexicon. Edited by T. Morell.
Lempriere, J., D.D.—Classical Dictionary.
Lévizac, M. de—French Grammar.
Littleton, Dr. Adam—Latin Dictionary.
Jamieson, John, D.D.—An Ethnological Dictionary of the Scottish Language.
Johnson, Samuel—Dictionary of the English Language. 2 vols.
Mair, J.—Introduction to Latin Syntax.
Martinelli, Joseph—French-Italian, Italian-French Dictionary.
Morell, Thomas, D.D.—Robert Ainsworth's Dictionary, English and Latin.
Neilson, Rev. W.—Greek Exercises.
Neuman and Baretti—Spanish and English Dictionary. 2 vols.
Nolan, Frederick—Introduction to Hebrew Grammar.
Philips, Edward—The New World of Words.
Parkhurst, John—Greek-English Lexicon to the New Testament.
" Hebrew-English Lexicon.
Picard, H.—English-Dutch, Dutch-English, Dictionary.
Raskins, R. K.—Lexicon Islandicum.
Rycrup and Krast—Dansk-Norsk Literatur Lexicon.
Scapula, J.—Greek-Latin Lexicon.
Schrevelius, Cornelius—Greek-Latin Lexicon.
" Greek-Latin, and Latin-Greek Lexicon.
Serenius, Jacob, D.D.—English and Swedish Dictionary.
Simon, J.—Hebrew and Chaldee Lexicon.
Spurrell, D.—Welsh Dictionary and Grammar. 2 vols.
Thomasius, T.—Latin-English Dictionary.
Valpy's Greek Grammar.
Wolff, Ernst.—Danish and English Dictionary.

Mr. BRABROOK, F.S.A., Hon. Secretary to the Anthropometric Committee, exhibited two albums of photographs collected by that body.

Colonel KINCAID read a "Report on the Bheel Tribes of the Vindhyan Range."

Mr. S. E. PEAL exhibited an interesting collection of Ethnological Drawings made in Assam.

The following paper was read by the Author —

On the RELATIONS *of the* INDO-CHINESE *and* INTER-OCEANIC RACES *and* LANGUAGES. By A. H. KEANE, Esq., M.A.I.

1. During the last few years the progress of discovery and of missionary labours has thrown much light on the numerous peoples inhabiting the south-east corner of the Asiatic Continent and adjacent islands. A decided impulse was naturally given to archæological and ethnological studies in Further India by the French occupation of Saigon, resulting in the exploration of the stupendous ruins scattered over the Cambojan and Siamese provinces of Ongkor and Battambang. An almost entirely new ethnical and archæological world has thus been revealed to science, and the time has long gone by since it could be said, with Barthélémy Saint Hilaire, that perhaps with the solitary exception of Burmah no part of trans-Gangetic India deserved the serious attention of the historian.* Camboja, of which little had hitherto been known beyond the name, associated as that was with the *gamboge* of commerce, has already entered the domain of contemporary science; the great temple of Ongkor Vâht and the ancient city of Ongkor Thôm have begun to supply inexhaustible materials to the antiquarian and archæologist; philology is already busy with the inscriptions in an almost unknown tongue and character covering the colossal blocks of freestone strewn over the region stretching west and north from the wooded shores of Tonlé-sap; and the ethnologist is now engaged in co-ordinating the information already accumulated regarding the Khmêrs, Sâm-rê, Kûys, Stîengs, peoples heard of now almost for the first time, but to whom a permanent interest attaches, as the recognised lineal descendants of the builders of those astounding monuments. To us, for the moment at least, they have a still greater interest, as possibly destined to supply the key to the difficult problems connected with the mutual

* "A l'exception peut-être du Birman les autres pays de l'Inde transgangetique méritent à peine les regards de l'histoire." ("Journal des Savants" for August, 1861, p. 458.)

relations of all the Indo-Chinese and Inter-Oceanic peoples. From this point of view these primitive inhabitants of the peninsula have, however, scarcely yet been studied at all, and the present may claim to be a first serious attempt to show their true connection with the Indo-Pacific races.

2. The speculations hitherto advanced regarding the migrations and affinities of the so-called "Malayo-Polynesians" having all been formed independently of this indispensable factor, are necessarily crude and contradictory, and can be considered as at most but tentative. The various theories bearing on this subject may perhaps be reduced to three—those associated with the names of Humboldt, Crawfurd, and Wallace.

Humboldt adopted and popularised John Reinhold Forster's suggestion* that all the existing languages of the brown Oceanic races came of one original mother-tongue, which through time and isolation became divided into many dialects, and that all the peoples speaking them are of one and the same stock. To give expression to this assumed unity of race and speech the term "Malayo-Polynesian" was invented, a term which unfortunately still holds its ground, although, as will presently be seen, utterly at variance with ascertained facts, and conveying an absolutely erroneous idea of the true affinities of these peoples.

Crawfurd's theory, learnedly argued in the famous "Dissertation" accompanying his "Grammar and Dictionary of the Malay Language,"† is directly opposed to Forster's. Rejecting the supposition of a common original mother-tongue, he holds that within the Oceanic area "the distinct and independent tongues" are "innumerable,"‡ and that their connection with the Malay is merely verbal and due entirely to a comparatively recent spread of the Malay and Javanese influences westward to Madagascar, eastward to the Eastern Pacific Islands. The ethnical question he scarcely touches, troubling himself little with the possible affinities of peoples that may have nothing in common beyond a greater or less percentage of words borrowed from the leading

* Forster's words are: "But it would be highly inconclusive from the similarity of a few words to infer that these islanders (the eastern Polynesians) were descended from the Malays. I am, therefore, rather inclined to suppose that all these dialects preserve several words of a more ancient language, which was more universal, and was gradually divided into many languages now remarkably different. The words, therefore, of the language of the South Sea Islands, which are similar to others in the Malay tongue, prove clearly, in my opinion, that the South Sea Islands were originally peopled from the Indian or Asiatic Northern Islands." (Observations, "Voyage Round the World." London, 1778.)

† London, 1852.

‡ "Instead of considering all the languages within the wide bounds described as mere dialects of one tongue, the results of my own inquiry confirm me in concluding that they are innumerable." (P. 285.)

languages of culture in Malaysia. In this domain he assumes, in fact, the presence of several distinct brown besides the dark races.

In his classical work on "The Malay Archipelago,"* Alfred Russell Wallace propounds a theory which may, without exaggeration, be said to have taken anthropologists by surprise, and which has by most of them been always regarded as paradoxical.† After separating the Malay from the Papûan and connecting it with the Mongolian type, he proceeds to connect the large brown Eastern Polynesian race, not with the brown Malays, but with the black Papûans, thus overriding all the inductions of philology and ethnology alike. "It is to be especially remarked," he writes, "that the brown and the black Polynesian races closely resemble each other. Their features are almost identical, so that portraits of a New Zealander or Otaheitian will often serve accurately to represent a Papûan or a Timorese, the darker colour and more frizzly hair of the latter being the only difference. . . . I believe therefore that . . . . the brown and the black, the Papûan, the natives of Gilolo and Ceram, the Fijian, the inhabitants of the Sandwich Islands, and those of New Zealand, *are all varying forms of one great* Oceanic or Polynesian race."‡ In the "Australasia" of the Stanford series, edited by him in 1879, Mr Wallace still holds that the brown Polynesians are not only "quite distinct from the Malays," but, "except in colour, seem to have more affinity with the dark woolly-haired races of the Pacific," adding, however, a sort of saving clause to the effect that as it "now seems more probable," they "are equally distinct from both."§

My own view has already been roughly formulated in the monograph on "The Philology and Ethnology of the Inter-Oceanic Races," appended to the just quoted work on Australasia,‖ and will here be more fully discussed. But it will be convenient first to make a few remarks on the foregoing theories, of which Forster's comes decidedly much nearer to the actual facts than either of the others. It seems in fact rather to err in falling short of, than in absolutely running counter to, the truth. It of course takes no account of the Asiatic element, the real significance of which could not possibly at the time have been foreseen. Hence the hypothesis of one original tongue and one original race subsequently differentiated into many

* London, 1868.

† It called forth, amongst others, a vehement protest and crushing rejoinder from the Rev. S. J. Whitmee, in the "Contemporary Review" for February, 1873.

‡ Pp. 591–2, of 5th Ed., 1874.

§ P. 261.

‖ Pp. 592–659.

dialects and many peoples, such as we now find them, is necessarily inadequate and insufficient to account for the present known condition of things. The differences existing between the languages and the physical types of the brown races in the Oceanic area are far too varied and far too profound to be derived from one primitive language and from one primitive ethnical stock alone, and it will be seen that there are elements in the Malayan languages and races absolutely non-existent in those of the Eastern Pacific, while the Polynesians possess characteristics of type and speech which they could not have derived from the Malayan tongues and peoples as at present constituted.

This last remark indicates also the weak point in Crawfurd's theory. He rightly speaks of a linguistic element, common to all the brown peoples from Madagascar to Easter Island. But he is hopelessly astray in assuming that this common element is not organic, but of comparatively recent date and merely borrowed from the representative Malayan peoples of the Archipelago. It will be seen that this universal element is, on the contrary, fundamental, pre-historic, a joint inheritance, not subsequently derived by the Eastern Polynesians from the Malays, but coeval with the first dispersion, and preserved more faithfully by the eastern branch than by the present inhabitants of Malaysia.

Mr. Wallace also rightly separates the Malays from the Papûans and connects them with the Mongolian type. His startling assumption of "one great Oceanic race," of which Papûan and Tahitian are but "varying forms," he seems to have practically given up, though still evidently inclined to connect the Tahitian rather with the Papûan than with the Malay, while somewhat inconsistently adding that all are probably "equally distinct" from each other. But it will, I trust, be made evident that the Papûan differs quite as much from the Eastern Polynesian as it does from the Malayan type, and that a fundamental connection between the last two must be admitted. At the same time, to Mr. Wallace cannot be refused the merit of having been one of the first to recognise the Mongolian as an important factor in the problem. A principal aim of this paper will be to determine the real position not merely of the Mongolian but of the Asiatic element in a wide sense in relation to all the Inter-Oceanic races.

For the misguiding and no longer defensible expression "Malayo-Polynesian"* I here substitute *Indo-Pacific*, as the

* As an ethnical designation, this term implies a race everywhere affected by Malayan elements. But it will be seen that there are no true Malay elements at all in Eastern Polynesia. Linguistically, there is less objection to the

collective name of all the brown Inter-Oceanic races. With Malayo-Polynesian must also go "Polynesian," a geographical rather than an ethnical term, embracing as it does "such fundamentally distinct types as, for instance, those of the Samoan and Solomon groups."* For it I have substituted, and the Rev. S. J. Whitmee† has accepted, the entirely new term *Sawaiori*‡ as the collective name of the large brown race exclusively inhabiting all the Eastern Polynesian islands east of a line drawn from New Zealand through Samoa to Hawaii inclusively. *Sawaiori* therefore here takes the place of the vague "Polynesian" and still more vague "Kanak,"§ as well as the singularly infelicitous "Mahori" of Mr. W. L. Ranken. The mere mention of this conflicting nomenclature is a good illustration of the confusion still prevalent regarding the mutual relations of these races.

4. Coming to the practical question at issue, I hold that:—

I. Both of the Great Asiatic types conventionally known as Caucasian‖ and Mongolian have from prehistoric times occupied the Indo-Chinese peninsula.

term; but even in this sense it is not very satisfactory, especially as this family must now be extended so as to include a whole group of languages spoken in Further India, as fully explained further on.

* Stanford's "Australasia," p. 596.

† In paper on "Polynesian Nomenclature," read at the Anthropological Institute, January 7th, 1879.

‡ Composed of *Sa*=first syllable of *Samoa*; *waii*=second syllable of *Hawaii*; and *ori*, last syllable of *Maori*; these being three of the most representative Eastern Polynesian groups.

§ From *Kanaka*—man, people, now written by the French *Canaque*, and by them and others applied indifferently to the Melanesians, New Caledonians, and brown Tahitians, Hawaiians, &c., hence no longer available as an accurate ethnical term.

‖ It need scarcely be said that these terms are here used *faute de mieux*, and in the purely conventional sense in which they are used in scientific works. In this paper, however, *Caucasian* receives a wider extension than has hitherto been given to it. But it will be seen that this extension was unavoidable, unless we are needlessly to assume the development in two independent centres of two types practically identical in form. To me, at all events, it seemed more reasonable to suppose the gradual diffusion of one than the independent development of two such types. Besides, the French Anthropologists have already freely applied the term *Caucasian* and even *Indo-European* to the Non-Mongol races of Indo-China (*see* note *, p. 261; note †, p. 262), and as the object of this paper is to connect these Non-Mongol races through the Malaysians with the Eastern Pacific Islanders, the further extension of *Causasian* to the whole Oceanic area was necessitated by the very nature of the case. No doubt the Oceanic peoples in question are of a brown complexion, whereas the typical Caucasian is fair. But the transition from *fair* to brown or dark is conceivable, and has been realised by the Aryans in India, who are darker than any of the Non-Mongol Indo-Pacific peoples. In other respects there is no essential physical difference between the Western Caucasians, the Non-Mongol Indo-Chinese tribes, the "Indonesians" of Malaysia and the Eastern Pacific Islanders. For the anthropologist they are fundamentally one race, and ought therefore to be grouped collectively under some one general designation. In the absence of a better, *Caucasian* is here retained and extended. On the question of colour, de Quatrefages well observes: "The colour of the skin depends upon a

II. The brown races of Malaysia consist exclusively of these two elements variously intermingled, the Caucasian forming everywhere the substratum.

III. The large brown race of Eastern Polynesia (our Sawaiori) consists exclusively of the Caucasian element.

IV. The Negritos, the true Autochthones of Indo-China and Western Malaysia, have been almost everywhere rather supplanted than absorbed by the Caucasians and Mongolians.

V. The Papûans, the true Autochthones of Eastern Malaysia and Western Polynesia, have been rather absorbed than supplanted, the fusion producing the Melanesians in the east, the so-called "Alfuros" in the west.

5. Let me state at once that of this somewhat formidable array of propositions, the last two have been introduced merely to complete the picture, as our attention will be occupied chiefly with the relations of the brown and yellow races to each other. If their mutual affinities can be determined, the position of the dark races will present no serious difficulty. For it will not be denied that these dark autochthonous races play on the whole a passive rather than an active part in the conflicting waves of migration going on throughout long historic and prehistoric epochs. The movements of population have undoubtedly been first southwards from the Asiatic mainland, then from the Archipelago eastwards to the Pacific. The lighter races have thus everywhere been the aggressors, successively invading and mostly extirpating* the Negritos in Western Malaysia, but generally intermingling with the Papûans in the east.

6. It will be noted that no room is here left for an independent Malay stock, and it will be one of the objects of this paper

simple secretion which is subject to modification under a number of circumstances, as is the case with many others. There is, therefore, nothing strange in the fact that some human groups, differing widely in other respects, should resemble each other in the matter of colour. This is the reason why the Hindu (*Aryan*), the Bishares [Beja, a Hamite race north of Abyssinia] and the Moor (*Semitic*), although belonging to the *white race*, assume the same, and even a darker hue than the *true negro*. It also explains the fact that the colour of the negro approximates in certain cases to that of peoples belonging to the white stock, who are more or less of a brown colour, or assumes a hue which exactly recalls that of the yellow races. Thus in man as in animals, the aphorism is verified which was formulated by Linnæus in regard to plants: *nimium ne crede colori.*" ("Human Species," 1879, p. 50.)

* That the Caucasians did not amalgamate with the Negritos seems evident from the fact that there are no half-caste Negrito types in the western, as there are half-caste Papuan types in the eastern islands of the Archipelago. Why they did not amalgamate may perhaps be explained by the extremely low and debased physical condition of the Negritos. Compare De la Gironnière's account of the Philippine Negritos: "Les hommes me paraissaient plutôt une grande famille de singes, que des créatures humaines." ("Aventures d'un gentilhomme breton aux îls Philippines." Paris, 1855, p. 321.)

to show that, for science, there is no organic Malay type. Being, as I believe, the result of known compound elements, Malay, like Keltic, Teutonic, Aryan itself, is essentially a national and linguistic, not a racial designation.

7. Of the presence of two distinct types in Further India, there can no longer be the shadow of a doubt. That the great bulk of the people—Burmese, Siamese, Laos, Annamese, belong to one stock; the Mongolian—and that they are monosyllabic in speech, are accepted facts needing no demonstration. The existence of another race of a different type, mainly occupying the mountain range west of Annam, and merging northwards in the Yunnan highlands, was also known from the earliest times. Repeated allusion is made to such a race in the Chinese records as far back as those of the Thang epoch, and the earliest European writers, Barros, Christoval de Jaque and others, carefully distinguish the two types. It is moreover very remarkable that both the Chinese and the European observers refer to a fair and even *white* element in this highland region.* But it was reserved for recent French explorers—those especially associated with the memorable expedition up the Me-Khong River in 1866–68—to identify this lighter, non-Mongol element with the Caucasians of the west. Their new political conquest of Cochin-China has thus led to a new scientific conquest of far-reaching consequence in the present inquiry—the discovery of a large ethnical family in the extreme south-east corner of Asia, which may be regarded as a detached branch of the great Caucasian stock, whose original home seems to have been the Iranian table-land.

8. Of this family, some branches have long been settled and civilised, while others are still living in the tribal state. Typical of the former are the Cambojans or Khmêrs, as they now call themselves, forming the bulk of the present kingdom of Camboja and neighbouring Siamese provinces of Ongkar and Battambang. Typical of the latter, are the Stiêngs, Charays, Chams, and Sûe, occupying the region between the left bank of the Mekhong, and the Annamese frontier, and all closely related to the Cambojans.† Great confusion has been caused by the multiplicity of terms vaguely applied by careless writers to these hill tribes; hence it may be well to explain that they are all collectively known to the Annamese as *Moïs;* to the Siamese and Laos as *Khâs;* to the Cambojans as *Penong* or *Penom;* to the Chinese as *Lolo;* words meaning little more than "wild" or "savage" in those

* Thus Christoval de Jaque tells us that the Cambojan ladies of rank "sont laanches et belles." And the Chinese annals allude to the white women found amongst the dark inhabitants of Chin-la.

† "Fort analogues aux Cambodgiens." Dr. Harmand in "La Nature," for September 8, 1877.

languages respectively. Thus the Chinese speak of the white,* black,† raw,‡ and cooked§ Lolos; the Annamese of the Moï Da-lan, Moï Da-watch, Moï Da-ratch, Moï-hoti, Moï-baria; the Siamese of Khas-kho, Khas-kuy, Khas-mi, Khas-mou-tse, etc., qualifying the general term by particular designations, according to circumstances. They themselves, as a rule, strongly resent such epithets, and have, of course, their own proper tribal names; the most important, besides those above mentioned, being the Banhars, Kuys (of whom there are many branches), Cedangs, Hadrongs, Proûs, Khmûs, Candios, Banams, Sâmrê, Xongs, Piâks, Lawas, Lemets, and Mûangs. Some of these, such as the Chams and Kuys, do not properly come within the category of tribal races at all; for the Chams at one time formed a powerful settled community in the present province of Binh-thuan, south-east corner of Annam, while the Kuys are regarded by the Cambojans as representing the primitive Khmêr stock, hence are by them known as the *Khmêr-dom*, that is, "original Khmêrs"—the Khmêrs of the grand epoch in Cambojan history, which saw the rise of those marvellous architectural creations already alluded to.

9. But all alike, whether nomad or settled, have two points in common. They belong to a physical type essentially different from the Mongolian, and allied to the Caucasian and Malaysian;‖ and they all speak polysyllabic languages, "recto tono," also allied to the Malaysian.

10. In his otherwise faulty classification of the Indo-Chinese races,¶ Dr. Thorel divides the non-Mongolian element into two branches; a dark and a brown; the first of which he calls "Malayo-Polynesian;"** the second "Caucasian." But the distinction is not fundamental, the two branches differing little from each other, except in the various shadings of their complexion, which is described as passing successively from fair and even white to light brown, and dark as we descend from the Yunnan highlands, southwards to the Mekhong delta. These savages, he remarks, are allied to two distinct races, presenting in the south the Oceanic type, while in the north connecting themselves "with the Caucasian, or more correctly with the

* Pè-Lolo.
† He-Lolo.
‡ Sen-Lolo.
§ Shu-Lolo.
‖ *Malaysian*, not *Malayan*. The importance of the distinction will become apparent further on.
¶ In "Notes Anthropologiques" appended to 2nd vol. of the "Voyage d'Exploration en Indo-Chine," 1866–8, edited by Francis Garnier, Paris, 1873, pp. 289–320.
** "Race noire ou Malayo-Polynésienne," and "Race brune, ou rameau noir de la Race Caucasique." (*Ibid.*)

Indo-European populations."* Here therefore we have the connection between the Western Caucasian ("Indo-European"), Indo-Chinese, and Oceanic stocks for the first time formulated in scientific language.

11. The ethnological description of the Yunnan and Cochin-Chinese aborigines corresponds entirely with this view. Sinking minor details, they are broadly described† as a fine, vigorous race, with symmetrical and well-set frames; stature rather above the middle size, straight profile, oval face, dolichocephalous head, high forehead, retreating very slightly, black hair, often inclining to brown, straight or wavy, and elliptical in section, beard and whiskers well furnished and always frizzled, or at least wavy, eyes perfectly straight and horizontal, nose not particularly prominent, but nearly always straight, and never flattened at the root, cheek-bones scarcely if at all prominent, mouth of medium, and even small size, with moderately thick lips, but no trace of prognathism, complexion mainly of a bister or brown colour, but varying as above, though never so dark as that of the Aryans of India. This, *mutatis mutandis*, is on the whole a very fair picture of the ordinary European type, and the very opposite of the Mongolian. But there is one point which to me seems decisive—THEY HAVE GOT EXPRESSION; "energetic features," says Thorel, "but without ferocity or hardness, and FAR MORE EXPRESSIVE THAN WITH THE MONGOLIANS." We know, of course, that one Chinese or one Kalmuck can be distinguished from another, just as the shepherd is able to distinguish one sheep from another. But one of the most marked differences between the Mongolian and Caucasian types is assuredly the lack of expression in the former, while one of the most striking characteristics of the numerous heads of aborigines figured in the large Atlas accompanying Garnier's work is the play of

* "Dans le nord ils sa relient à la race Caucasique, ou plus exactement aux peuples Indo-Européens." (*Op. cit.* p. 290.)

† Some of Thorel's expressions are: "Grands et vigoreux; épaules larges; taille dessineé, membres bien proportionnés; jambes très droites, mollets bien placés et très-développés; teint moins noir que chez les Hindous; profil droit; visage ovale; front assez haut, droit peu fuyant; barbe noire bien fournie, toujours frisée ou en moins ondulée; ou en observe sur les côtés du visage; yeux horizontaux; nez ni large ni plat à la racine; pommettes très-peu prominents; bouche de grandeur moyenne; lèvres peu épaisse jamais prognathes; PHYSIONOMIE ASSEZ ÉNERGIQUE SANS FÉROCITÉ NI DURETÉ, BEAUCOUP PLUS EXPRESSIVE QUE CHEZ LES MONGOLIQUES." (*Op. cit., passim.*) Compare this with the ordinary Malay type: low stature, oblique eyes, high cheek bones, black hair (long and lank), olive-yellow or brown complexion. "Die Malayen sind im Allgemeinen hellere, gelbliche und bräunliche Menschen, mit langem straffen schwarzen Haar, kleiner Statur, etwas schiefstehenden Augen und hervorragenden Backenknochen." (Dr. A. B. Meyer's "Minahassa Auf Celebes." Berlin, 1876, p. 7.) And with the "Pre-Malay," "Indonesian," or sub-Malay type of the Archipelago, as described elsewhere.

expression, the animation, and especially the individuality stamped upon so many of them.

Dr. Thorel connects the more southerly hill-tribes not with the brown but the dark Oceanic stock, though his language on the point is extremely vague. "In the south," he says, "they present the Oceanic or Australian type, and belong to the group of the Alfouros of writers."* It is difficult to see what is here meant by "Oceanic," which seems to be spoken of as synonymous with Australian and "Alfouro." But Alfouro, though not an ethnical or racial name at all,† meaning in the Archipelago, little more than non-Mohammedan, wild or pagan, is understood to apply most commonly to the mixed Papuan peoples of Ceram, Gilolo, Floris, Timor, Mysol, etc., who have nothing in common either with the Australians or the Indo-Chinese hill tribes. Their great characteristic is woolly hair, and woolly hair occurs nowhere in India or Further India except amongst the Negrito Samangs of Malacca, who are not here in question. Dr. Harmand,‡ replying to a remark at a meeting of the French Anthropological Society, to the effect that the Moïs were said to have woolly hair, said he was not aware that woolly hair had ever been spoken of in Indo-China; and Topinard added: "I know no case of woolly hair in India." Hence Thorel's theory falls through, and the affinities of the Indo-Chinese aborigines are, as stated, not with the dark Papûans, but with the brown and olive-brown Malaysians. No doubt A. Maurice mentions the "cheveux frisés" of the Banhars. But read in the light of the types figured in Garnier's Atlas, this expression evidently means nothing more than "wavy," and seems by many French ethnologists to be used as practically synonymous with "ondulé," an epithet perfectly applicable to the Caucasian, but not to the Mongolian stock. The hair of the Piâks, Dr. Harmand describes, as "gros, ondulés, noirs à reflets roussâtres,"§ the ruddy hue being specially remarkable, and

* "Dans le sud ils présentent le type Océanien ou Australien, et appartiennent au groupe des Alfourous des Auteurs." (*Op. cit.* ii, p. 295.)

† "Ich vermeide mit Absicht die irreleitende Bezeichnung 'Alfuren.'" (Dr. A. B. Meyer, "Reise Nach Neu-Guinea," p. 18.) And at p. 23, "Dieser Name ist in keiner weise zu adoptiren und ist nur dazu angethan, wenn man ihn weitergebraucht, noch mehr Verwirrung hervorzurufen bei der Betrachtung der Bewohner des Indischen Archipels, als er bis jetzt schon hervorgerufen hat und noch täglich hervorruft."

‡ A. Hovelacque: "Quant au Moïs, on a dit qu'ils 'avaient des cheveux laineux." To which Dr. Harmand says: "Qu'il ne sache pas qu'on ait jamais parlé de cheveux laineux dans l'Indo-Chine." Topinard: "Si les cheveux laineux n'existent pas dans l'Indo-Chine, s'il n'y en a pas trace, alors je ne comprends plus rien à la doctrine Négrito . . . Je ne connais pas d'exemple de cheveux laineux dans l'Inde." ("Bul. de la Soc. d'Anthropologie," 1878, p. 36.)

§ "La Nature" for September 8, 1877.

corresponding exactly with what we read of the fairer types—Battas, Pasumahs, etc., in Malaysia.

12. Some of the tribes have been visited and described more fully, but always with the same general results. Thus Dr. A. Maurice* gives us a long account of the Banhars, who, he says, are above the middle size, with straight but sometimes wavy hair, eyes very slightly if at all oblique, ruddy complexion, etc. The Charays, who are closely akin to the Khmêrs, C. E. Bouillevaux speaks of as "WHITE SAVAGES of CAUCASIAN TYPE."† The same writer, who spent many years evangelising these tribes, replies to some of the savants of the Mekhong expedition who had hastily confused the Khmêrs with the Annamese, that "there are assuredly enormous differences between these two peoples in the physical, mental, linguistic, religious, and other respects.‡ He looks on the hill tribes as the true aborigines, for thousands of years occupying the forests and mountains of Indo-China," and thinks that all the country from Cape St. James northwards to the Chinese province of Quang-tong was originally inhabited by a people akin to the Malaysians. He even goes so far as to regard the substratum of the Annamese as originally connected with the Oceanic stock, though afterwards profoundly modified by the Chinese (Mongolian) element.§ And in this connection it is worth while noting that the western branch of the Kûys (Khmêrdom) in the present Siamese province of Battambang are known to their Laos neighbours by the name of Maloh, a word curiously suggestive of Malay.

13. A further step towards affiliating the Indo-Chinese Caucasians with the Oceanic peoples is made by the distinguished naturalist, Henri Mouhot,‖ who connects the Northern

* In "Revue d'Anthropologie" for October 15, 1878: "Yeux très-peu obliques sinon tout-à-fait droits; cheveux quelquefois frisés, teinte rougeâtre," &c., *passim*.

† In "l'Annane et le Cambodge," Paris, 1874: "Des savages blancs à type caucasique." (P. 155.)

‡ "Il y a assurément des différences énormes entre ces deux peuples au physique, au moral, sous le point de vue linguistique, religieux, etc. (*Op. cit.* p. 201.)

§ Les Annamites seraient selon nous un peuple se rattachant par l'origine à la race malaise, mais profondément modifié par l'élément chinois. (*Op. cit.* p. 200.) So also Hovelacque: "L'élément malais tient beaucoup de place chez eux." ("Bull. de la Soc. d'Anthropologie," 1877, p. 35.)

‖ In his "Voyage dans les Royaumes de Siam, de Cambodge, de Laos, &c." Paris, 1868. "En somme, toute cette population, hommes, femmes et enfants, me rappelait les types du nord de la Polynésie, tels qu'ils sont représentés dans les grandes publications de nos marins français de 1820 à 1840. Certes, s'il avait été donné à l'illustre Dumont d'Urville d'explorer les rives du Mékong, il aurait été fixé sur les origines des Carolins, des Tagales de Luçon et de ces Haraforas de Célèbes, qui lui ont apparu comme les ancêtres des Tongas et des Tahitiens." (P. 326.)

Polynesians with the natives of the Luang-Prabang highlands, in whose midst his brief but brilliant career was brought to a premature close. After remarking on their athletic frames and Herculean strength, he observes that "all these populations, men, women, and children, recall the types of the Northern Polynesians such as they are figured in the large publications of our French navigators from 1820 to 1840. Had the illustrious Dumont d'Urville had the opportunity of exploring the banks of the Mekhong he would have assuredly made up his mind as to the origin of the Caroline Islanders, of the Tagalas of Luzon, and of those 'Haraforas' of Celêbes who seemed to him to be the ancestors of the Tongans and Tahitians."

14. But independently of authorities, statements, and descriptions, we need but compare the pictures of a Cambojan Stiêng and a Sumatran Batta, as figured in the works of Von Rosenberg and Mouhot (pp. 161 and 56), to recognise the identity of the two types, and their radical difference from the Mongolian, as illustrated by the portraits of the first and second kings of Siam, and of the Raja of Gorgontalo in the island of Celêbes. These figures also clearly show the difference between the two Malaysian types, Malay proper and sub-Malay (of which more further on), while the Rajah affords a striking commentary on the passage in Wallace's "Malay Archipelago," where he connects the Malays with the Mongolians:—"The Malayan race, as a whole, undoubtedly very closely resembles the East Asian populations from Siam to Mandchouria. I was much struck with this when in the island of Bali I saw Chinese traders who had adopted the costume of that country and who could then hardly be distinguished from Malays; and on the other hand, I have seen natives of Java who, as far as physiognomy was concerned, would pass very well for Chinese."*

15. With the kings of Siam may also be compared their contemporary the present King of Camboja (Mouhot, p. 124), each typical of his race, and the latter showing such a profound divergence from the Mongolian, and such a decided approach to the regular features of the Caucasian type. But a still more instructive lesson may be derived from a comparison of the present King of Camboja with the famous statue of Bua-Sivisithiwong, the leprous king, according to one tradition builder of the mighty temple of Ongkor-Vâht. If there is a certain unmistakable Hindu touch in the statue, due of course to the Buddhist origin of Cambojan civilisation, it is at all events an Aryan-Indian type obviously grafted on to a kindred

* Page 591, 5th edition.

Cambojan stock. In this respect it fully bears out Mouhot's* remark that most of the bas-reliefs on the Ongkor monuments have a striking resemblance to the features of the present Cambojan populations, same regular features, long beard, and even their very dress, arms, and musical instruments. Garnier also recognised in these bas-reliefs various types of the savage tribes of Further India.† Here, therefore, we have the most emphatic testimony to the connection of the present Khmêrs and Khmêr-doms with the builders of those monuments, and unquestioned proof of the unbroken continuity of the Cambojan type throughout the historic period on this spot. But there are no records or traditions of their arrival in Further India as there are of the eruption of the Annamese and other Mongolian peoples. Consequently the Khmêrs, that is the Caucasians, must be regarded as the first occupants of Indo-China, at least as far south as Malacca.

16. And here it should be remembered that the ancient Cambojan Empire, said to have embraced one hundred and twenty provinces, occupied the whole region from the Gulf of Tongkin to the Gulf of Siam, stretching for an unknown distance northwards. Here the Khmêr race came in contact with the Mongolian hordes now pressing down through the valleys of the great rivers, while in Malacca they were undoubtedly preceded by the Negritos, who were probably in possession of this region while still geographically connected with the Archipelago. At least, it seems difficult to suppose that the Negritos could have reached Malacca by sea, either from the Philippines or Andaman Islands, for even now none of these Samang tribes have even a rudimentary knowledge of navigation. Hence their present distribution at these distant points is a strong confirmation of Wallace's view regarding the former connection of the Archipelago with the mainland. And this consideration in its turn removes any difficulty there might be in explaining the arrival first of the Khmêrs and then of the Mongolians in Malaysia. Many other circumstances in any case require us to assume that these migrations took place at extremely remote periods, when all may, in fact, have still been dry land, and before the present Archipelago had been created by the slow subsidence still going on in those regions.

* "En visitant les ruines d'Ongkor nous avons été singulièrement étonnés de retrouver dans la plupart des bas-reliefs de leurs monuments des traits frappents de ressemblance avec le type du Cambodgien et celui de ces sauvages. Régularité ou visage, longue barbe, étroit langouti, et, chose caractéristique, à peu près mêmes armes et mêmes instruments de musique." (*Op. cit.* p. 214.)

† "Au-dessus sont représentées diverses scènes ou l'on reconnait différentes types des tribus sauvages de l'Inde-Chine." (*Op. cit.* vol. i, p. 53.)

17. The conclusions of the French savants* are strengthened by a comparison of the habits and usages prevalent amongst the Indo-Chinese and Malaysian peoples. On this subject a paper was read at the Anthropological Institute, on April 17, 1879, by Colonel Henry Yule,† who mentioned such common practices as the following, some of which, taken by themselves, might not prove much, but when taken in connection with so many other points of resemblance they go far to establish a close affinity between the continental and insular populations:—

Aversion to milk as an article of diet.

Love of putrescent fish.

Extravagant enlargement of the ear-lobe.‡

The fashion of covering the teeth with a case of gold prevalent from Western Yunnan to the Islands of Timor, Sumatra, and Celêbes.

Head-hunting common to the Kukis, Nagas, and Garos of the Assam Highlands, and to the Bornean Dyaks and Turajas of Celêbes.

Cock fighting.§

Barrack houses occupied by many families in common (Singphos, Mishmis, and Mekirs of the Assam border; Bornean Dyaks of Lundu River, who build houses over 500 feet long).

Pile-building practised, not only as a protection against damp in swampy ground, but in the Arracan and Burmese Highlands, by Karens,‖ Banhars, Khmêrs, Borneans, Sundanese of Java, etc.

Husband entering wife's family (Khasia, Piâks, Java, Dyaks).¶

Father exchanging his own for his child's name (Khasia and throughout the Archipelago).

Counting by numeral auxiliaries, such as head in English, mann in German; twenty head of cattle; Zwölf mann soldaten.

Subjoined are a few specimens of such numeral collectives in Burmese, Shan, and Malay:—

* To whom may now be added Mr. Charles F. Tremlett, British Consul at Saigon, who, in his recent report on the trade of Cochin-China, remarks that in appearance, speech, and most other characteristics the *Cambojans differ entirely from the Chinese, Annamese, Siamese*, etc. He also refers to the Malay affinities of the Annamese mentioned in note, p. 264.

† *See* p. 290.

‡ Mentioned by Marco Polo.

§ Of the Khmêr, Garnier remarks, "Il se plaît au combat de coqs." (*Op. cit.* vol. ii, p. 109.)

‖ "Les maisons sont toutes bâties sur des pilotis habituellement hauts de trois ou quatre pieds." (A. Maurice, *loc. cit.*)

¶ Of the Piaks, Dr. Harmand writes: "Après le marriage le jeune homme demeure dans la maison des parents de sa femme." ("La Nature," *loc. cit.*)

Burmese.

Oos, chief, first; for kings, divinities, priests.
Yauk, male; for rational beings not divine.
Gaung, brute beast; for irrational beings.
Pya, superficial extent; for dollars, countries, dishes, etc.
Lun, rotundity; for eggs, loaves, bottles, cups, fingers, etc.
Tseng, Gyaung } extension in a straight line; for roads, lines, spears, etc.
Tsi; for beasts of burden.
Tshu; for deities, pagodas, etc.
Pa; for people of rank.

*Shan.**

Kau, human beings.
To, animals.
An, inanimates.
Kan, flowers.
Lak; fruits, cups.
Hsu; deities, pagodas.
Hpeun; books, mats.
Mak; knives, needles, hoes.
Lang, buildings.

Malay.†

Âlai; leaves, grasses, hairs, feathers.
Batang; trees, logs, spars.
Biji; corn, seeds, pebbles, gems, eggs, etc.
Buwah; fruits, loaves, cakes, mountains, countries.
Ekor; beasts, birds, fishes, reptiles.
Ôrang, human beings.
Puchuk; cannon, candles, torches, etc.
Ex. gr.:—Ada *saôrang* saudagăr kapâda *sabuwah* nagri—there was one-man merchant in one-fruit country.

18. This brings us to the philological argument, the importance of which was clearly seen, though not worked out by Francis Garnier, who did not hesitate to say that "the modern Cambojan establishes a transition between the polysynthetic language of the Sunda Islands and the monosyllabic languages of the peninsula."‡ Unfortunately the inquiry into the con-

* Rev. J. N. Cushing's "Grammar of the Shan Language," Rangoon, 1871.
† Crawfurd's "Malay Grammar and Dictionary," London, 1852.
‡ "Le Cambodgien moderne établit une transition entre la langue polysyllabique des îles de la Sonde et les langues monosyllabiques de la péninsule." (*Op. cit.* vol. i, p. 110.)

nection between these two linguistic groups has been obstructed or arrested partly by Garnier himself, partly by the death of Janneau in the midst of his Khmêr studies. Since this event little seems to have been done beyond the publication by E. Aymonnier* of a valuable Khmêr dictionary, accompanied by some grammatical notes based on Janneau's interrupted labours. On the other hand, inquiry was discouraged by Garnier, who lacked the true philological instinct, and who incautiously declared that Khmêr was a monosyllabic language,† which would remove it from the Caucasian, to which it really belongs, and affiliate it to the Tibeto-Chinese, with which it has no more than a verbal connection. The mistake was corrected by C. E. Bouillevaux,‡ but Khmêr is still generally supposed not only to be monosyllabic, but also to be spoken "vario tono," that is, with the intonations exclusively characteristic of the Tibeto-Chinese family. It cannot therefore be too emphatically asserted that Khmêr has no fundamental relationship to the toned monosyllabic tongues, that it is polysyllabic, spoken *recto tono*, like all Caucasian and Malaysian languages, and that its organic affinities are on the one hand with the languages of the Indo-Chinese Caucasian aborigines, on the other with the Malaysian linguistic groups, thus serving, as Garnier remarked, as the connecting link between the continental and Oceanic forms of speech.

19. The link could be furnished only by such a language as the Khmêr, because throughout the entire Oceanic area there is not a trace either of monosyllabism or intonation. This becomes all the more surprising when we remember that Malaysia, as above made evident, has been largely peopled by the Mongolian, as well as by the Caucasian races; and the Indo-Chinese branch of the Mongolians, with which alone we are here concerned, speak monosyllabic toned languages. But the explanation seems to be afforded by the order in which the migrations took place. We have seen that the Caucasian Khmêrs were the first to reach Further India, where they may be regarded as the true aborigines, and that the Mongolian, Annamese, Burmese, Siamese, etc., were later intruders from the north and the north-west. Now my contention is that the Caucasians were also the

* "Dictionnaire Khmêr-Français." Saigon, 1874 (lithographed). There is also a dictionary by Moura, which I have not seen.

† "Son génie est à coup sûr monosyllabique." (*Op. cit.* vol. i, p. 111.)

‡ "In "L'Annam et le Cambodge" (Paris, 1874), where he clearly shows that Khmêr is not monosyllabic or *toned*, like the Annamese, Siamese, Chinese, &c.; but polysyllabic and spoken *recto tono*, like the Malaysian languages (pp. 102–8.) Abel Hovelacque also has clearly recognised its true character. "L'ethnographie des Cambodgiens est aussi obscure que leur langue. On a vouler ranger celle-ci parmi les idicmes monosyllabiques. mais elle n'a pas la grande caracteristique de ceux-ci, à savoir LE SYSTÈME DES INTONATIONS." ("Bul. de la Soc. d'Anthropologie," 1877, p. 35.)

first to reach Malaysia, driven southwards in fact by the pressure of the Mongolians from the north. This is the natural sequence, and this is the condition of things required by the state of the Malaysian languages. The polysyllabic speaking Khmêrs were everywhere in possession of the field when the monosyllabic speaking Mongolians also reached the Archipelago. But the two linguistic systems are absolutely irreconcilable;* hence when settling in the islands, and amalgamating, as we know they did, with Caucasians, the Mongolians were fain to lay aside their peculiar speech, and adopt that of those in possession of the land. Crawfurd opportunely remarks that "the Chinese have been settled in great numbers throughout the Archipelago for many centuries, and intermarry with the native inhabitants; yet there are certainly not a dozen words of the Chinese language in Malay, Javanese, or any other native tongue of the Archipelago."† So also with the Siamese, who, though conterminous with the Malays at the north frontier of Malacca, "have not adopted half a dozen words of Malay, and the Malays no Siamese words at all."

We find therefore that in Malaysia, as almost everywhere else, the ethnical elements are mixed—Caucasian and Mongolian,‡ but that the linguistic remains, as it always does, unmixed in its structure. We can speak of a pure Malay linguistic family, but not of a pure Malay ethnical family. The latter is everywhere made up of Caucasian and Mongolian elements variously

* Irreconcilable because of the intonation required to distinguish the meaning of words in the Monosyllabic tongues. There are six tones, for instance, in Annamese; that is, every root is modulated in six different ways according to the sense attached to it. But there are no tones in Malay; hence a Malay, in borrowing an Annamese word, would at once destroy its tone, that is, destroy its very essence. As nothing but the wildest confusion would result from this, all borrowing would have presently to cease, and a "modus vivendi" would have to be sought not by an impossible compromise, but by the absolute triumph of one or other of the two conflicting elements.

† "Dissertation," pp. 287–8. And even the old writer Edmund Scott speaks of the Chinese traders in Malaysia "using all kind of cozening and tricks that can be devised." ("Discourse of Java and the First English Factory there," p. 11. Of these Chinese he remarks that "if once they cut their hair they never return to China," but settle in the country, &c. ("Athenæum," June 14, 1879.)

‡ Hence the inevitable inference, as already pointed out, that the so-called Malay is essentially a mixed type. On this point I am glad to find myself supported by the authority of de Quatrefages, who remarks: "All polygamists have regarded the Malays as one of their *human species*; many monogamists have considered them as one of the principal races. I showed long ago that in reality they are only a mixed race in which white, black, and yellow elements are associated, and that they are closely allied to the Polynesians." ("Human Species," 1879, p. 433.) And at p. 163: "Malaysia presents a perfect mixture of most different races, from the white to the negro. The Malays, properly so-called, are much rather a population levelled by the action of Islamism than a race in the true sense of the word. They present in a high degree the characters of intercrossing."

combined; the former, as we shall now see, is substantially Caucasian or Cambojan.

20. One of the first to point out the intimate connection between Khmêr and Malay was the French Missionary, M. C. Fontaine, a good Khmêr scholar, and also familiar with several dialects spoken by the Khmêr hill tribes. "The greater part," he says, "of those dialects, especially those of the Giraïes [Charays], Redais, Candio, and Penongs have such striking mutual points of contact that we cannot but consider them as branches of one stock. After residing several years amongst those tribes, being compelled by my failing health to remove to Singapore, I was surprised after a short study of the Malay to find that it contained a great number of Giraï words, besides a still greater number, such as the numerals and the like, which showed a marked analogy in both languages. I have no doubt that these relations will be found still more striking by those who may undertake a thorough study of these languages; THE GRAMMATICAL STRUCTURE OF WHICH IS ABSOLUTELY IDENTICAL."*

21. A careful study of Aymonnier's Khmêr notes fully bears

* Quoted by Mouhot, *op. cit.* p. 216. The last clause runs, "Dont le génie grammatical est identiquement le même."

With regard to the Châm, however, it should be noted that its Malay affinities have long been recognised, Crawfurd as usual attributing them to a later spread of Malay influences from Java and Sumatra ("Dissertation" p. 129). But recent research has shown that these affinities are common also to the Charay, Piâks, Prêhs, and the other Cochin-Chinese hill tribes that have had no contact with the Malays in historic times. Consequently the explanation lies deeper. "If," says Dr. Hamy, "the Châms are not the only tribe in the peninsula that speaks a Malay language; if all the western hill tribes of the main range have this language in common with the Châms, we shall have to regard the ethnical group of which the Piâks, Châyays, and Châms are branches as *a true continental Malay group* ("*un vrai groupe malais continental*); the Menang Kabau dispersion will no longer be anything more than an episode in the history of the race, and we must henceforth look, not to Sumatra, but to the Indo-Chinese highlands, for the origin of a people which has played the leading part in the history of Western Oceanica." (L'émigration du Menang Kabau ne sera plus qu'un épisode de l'histoire de la race, et c'est dans les montagnes Indo-Chinoises, et non plus à Sumatra qu'il faudra chercher l'origine d'un peuple qui a joué le rôle le plus important dans l'histoire de l'Oceanie occidentale). In "La Nature" for September. 8, 1877, p. 232. Here Dr. Hamy reverses Crawfurd's process, bringing the Malays from the Châms, not the Châms from the Malays, and he emphasises my contention in the clearest language. At the same time there can be no doubt that in historic times there has been a Malay reaction on the south-east coast of Cochin-China, which was invaded and partly subdued by Malayan rovers in 767 A.D. To this reaction are due many words in the Châm language obviously derived in recent times from the Malay and Javanese. A sure proof of this is, for instance, the Châm *nangrai*, country; from the Malay *nâgri*, which is Sanskrit, consequently historical and not organic. But words like *fire* (*apoi*, *api*), *water* (aya, ayâr), *I* (alun, ulun) cannot be explained in this way, and clearly point to a common origin of the Malay and Indo-Chinese polysyllabic linguistic families. It is curious to note that these words (Api, ayâr) are Javanese as well as Malay and Châm, that is, are a part of the common inheritance, the primeval "continental Malay" mother tongue.

out this statement, and places beyond all doubt the identical grammatical structure of the Cambojan and Malayan languages. Both are polysyllabic agglutinating tongues of an extremely simple character, some of the points in which they agree being :—

1. Absence of intonation; this feature removing both from the category of the Tibeto-Chinese tongues.
2. Absence of nominal and verbal inflexion.
3. Determination of the singular by the numeral *one*, of the plural by the same words: *all*, *full*, *complete*, as in Khmêr, *isi* and *sagala* in Malay.
4. Position of the adjective after the noun; Kh. *Kredas sa*; Mal. *Kartas putih* = paper white.
5. Use of similar words to determine gender.
6. Multiplicity of pronouns often alike in form and meaning. Thus the Malay *Mĭka*, one of the twelve alternatives for *thou*, is explained by the corresponding Khmêr *Mechas*, master. The Patam Malay *Kula*, one of the sixteen synonyms of the first personal pronoun, answers to the Khmêr *Khnhom*, both meaning "servant," and clearly showing how the numerous Malay pronouns grow out of such concrete conceptions. The Malay *ini*, this; *nûn*, that, in their turn explain the Khmêr demonstrative particles *nê*, *nu*, and like them mostly follow the noun; *laki-nûn* = man-that. Compare also the Khmêr and Malay interrogatives *nona* and *mana*, who? what?
7. The Khmêr quint system of numerals recalling the Malaysian pre-decimal period, when a week of five days prevailed in the Archipelago, and traces of which are still preserved in some of the Malaysian numerals. Compare the Khmer and Ende. (Floris Island.) 6 = 5 + 1; 7 = 5 + 2, etc.*

But the numerals open up a very wide question, and will again be referred to further on.

22. There are other points of resemblance, such as polite and vulgar forms of speech in Javanese and Khmêr; common geographical terms such as the Khmêr *Kâmpong* (Kâmpong Svai, Kâmpong Kassang, etc.) and the Malay *Kampung*, no doubt from the root Kampuh, to join or unite, both implying enclosures, quarters of a town, meeting or market places, and

* *Khmer*: pramuy, prampil: *Ende*: lema-sa, lema-rua. "Peut-être enfin faut-il chercher aussi dans la semaine de cinq jours jadis en usage dans les îles de la Sonde l'origine de la numération quinquinnale dont les dix premiers nombres Cambodgiens conservent aujourd'hui l'empreinte." (F. Garnier, *op. cit.* vol. i, p. 111.)

answering somewhat to the Greek *ἄγορα*; numerous lists of words,* some doubtless due to comparatively recent Malay influences, but others belonging to a common primeval stock. But common to the Khmêr and Malaysian tongues is one feature so peculiarly distinctive as of itself alone almost sufficient to establish their common origin. This is the use of identical infixes, which though forming a marked characteristic of Khmêr, Malay, Javanese, Tagala, Malagasy and other members of this group, has not yet been generally recognised. Such infixes were long known to exist in Javanese; but both Marsden and Crawfurd failed to detect them in Malay, and they have only quite recently been discovered by L. Dahle in Malagasy,† and by Janneau in Khmêr,‡ while no one has yet pointed out their common nature and form in the group. Hence I will make no apology for here giving a number of examples in illustration of this most important feature, establishing, as it does, the organic relationship of these languages on a solid basis. The infixes in question are always the same, the liquids *m* and *n*, and even *mn* with or without the connecting vowels *a*, *o* with *m*; *a*, *i* with *n*. Thus:—

In Khmêr: *m*, *am*, *om*, *mn*, *n*.

Slap, dead; samlap, to kill.
Sruoch, pointed; samruoch, to point.
Thleak, to fall; tomleak, to throw down.
Rolôm, to fall; romlom, to knock down.
Chereap, to know; chumreap, to show, teach, make known.
Kur, to draw; komnur, a design.
Srek, to cry; samrek, a shout.
Chêk, to share; chamnek, a part or portion.
Sauk, to corrupt; samnauk, a bribe.
Pram, to publish; bamram, a notice.
Pang, to wish; bamnang, a wish.
Rep, to confiscate; robep, seizure, thing seized.
Ar, to saw; anar, a saw.

In Malagasy: *in*, *om*.

Hanina, food; homana, to eat.
Tady, twisted, a rope; tomady, strong.
Taratra, glaring; tomaratra, transparent.

* Compare: Kh.bong, Mal.abang, brother; Kh.meas, M.mas, gold; Kh.prak, M.pirak, silver; Kh.prepon, M.parampuan, woman; Kh.Sach Sandan, M.Sarak Sondara, kinship; Kh.Kapal, M.Kapal, ship; Kh.lompeng, M.lâmbing, spear, &c.

† In "Antananarivo Annual and Madagascar Magazine" for 1876, pp. 41–4.

‡ In the above quoted work, by Aymonnier, *passim*.

Safotra, overflown; somafotra, brimful.
Sisika, forced in; somisika, shattered.
Sany, likeness; somany, like.
Safy, spying; somafy, sight of distant object.
Soratra, writing; somoratra, stained.
Kerakera, stiffness; homerakera, crusty.
Lamo, swimming; lomano, swimming.
Hosy, homosy and homosihosy, spoiled.
Toetra and tomoetra, state, condition.
Hehy and homehy, laughing.
Tamy and tomany, weeping.
Vono and Vonono, killed.
Vidy and Vinidy, bought.
Vaky and Vinaky, broken.

IN MALAYSIAN: *um, âm, in.*

Javanese.

Rayah, to bereave; rinayah, to be bereft.
Hurub, flame; humurub, to flame.
Balinbin, a small fruit; binalinbin, a round gem.

Tagala.

Basa, to read; bumasa, to make use of reading.
Kapatir, brother; kinapatir, like a brother, brotherly
Tapay, to knead; tinapay, bread.

Malay.

Palu, to beat; pâmalu, a club.
Pukul, to strike; pâmukul, a hammer.
Sipit, to grasp; sinipit, an anchor.
Padam, to extinguish; pâmadam, an extinguisher.
Pilih, to choose; pâmilihan, choice.

23. The comparison has so far been with the Khmêr or Cambojan alone. But it must be obvious that the other polysyllabic languages of Further India* have also contributed in various proportions towards the numerous tongues of the archipelago, the most striking characteristic of which is the vast quantity of their local, unknown, or foreign elements. Thus the subjoined table, judging from a comparison of 1,000 words,

* All of which form one closely connected linguistic group, springing from an original polysyllabic mother tongue. "Sans aucun doute on retrouverait dans le langage des nombreuses tribus qui habitent encore la partie montagneuse du Cambodge les sources mêmes de la langue primitive des Autochtones. Les Sâmrê, les Xong, les Khamen-boran sont de toutes ces tribus celles qui se rapprochent le plus des Khmêrs actuels, leur langue est pour les sept-dixièmes le Cambodgien moderne." (Garnier, *op. cit.* i, p. 11.)

shows that in five Malaysian tongues the average of unknown elements is about 60 per cent.* :—

	Common Malay words.	Words of unknown source.
Madurese	675	.. 325
Lampung	455	.. 545
Balinese	470	.. 530
Bugis	326	.. 674
Kayan	114	.. 886
Kissa	56	.. 944

Some of these unknown words may perhaps be credited to the long vanished Negrito aborigines: but most of them must still be sought for in the numerous polysyllabic languages of Indo-China. Hence it is that every fresh scrap of information regarding these continental tongues will be found to throw continuous light on those of Malaysia. A curious instance of this is afforded by the Zungi Naga dialect, an account of which has just been given us by the Rev. Mr. Clarke.† In this idiom the word for *dog* is *azu*, which at once explains the Malay expression *gigi-asu*, the canine teeth, where *gigi* = tooth, but *asu* occurs nowhere else in the language, the ordinary words for *dog* being *anjing*, *kuyuk*.‡ So with the Banhar, from a short list of words in which, given us by A. Maurice,§ I notice the following common to Malay :—

	Bahnar.	*Malay.*
Hill	Kông ..	Gunung.
Cave	Gôr ..	Gâr-onggong.
Drake	Ada ..	Itik.
Crocodile	Bla ..	Bûaya.
Fish	Ca ..	Ikan.
Frog	Kit ..	Katak.
Pig	Niung ..	Nangi.
Ant	Hmoït ..	Sâmut.
Dove	Trû ..	Dara.

24. But enough has probably been advanced to establish the organic connection between the Indo-Chinese and brown Malaysian races on physical, ethnical, and linguistic grounds. It remains to be seen in what relationship the brown Malaysian stands to the brown Polynesian or Sawaiori race. My view, as already stated, is that a section of the Caucasian Malaysians broke away eastwards before, or simultaneously with, the first arrival of the Mongolians from the mainland, and that the Sawaiori of the eastern islands are in fact the direct descendants of these Caucasian Malaysians. With the gradual peopling of the several eastern archipelagoes we are not here concerned, though it may be mentioned that there can be no

* Crawfurd, *op. cit.* p. 285.

† In "Journal Royal Asiatic Society" for April, 1879.

‡ Of course, though now obsolete, *asu* must have formerly meant *dog* in Malay, as no doubt it does still in other Malaysian dialects.

§ In "Revue d'Anthropologie" for October 15, 1878.

reasonable doubt of the dispersion having taken place from Samoa.* That the migration to Samoa was from the west, in fact from Malaysia, is also a generally accepted fact.† That it took place at a very remote period is obvious from such considerations as these:—

1. The great length of time it must have taken to people all the Eastern Pacific, as far north as Hawaii, south to New Zealand, and east to Easter Island.
2. The still greater length of time required to develop the mixed Sawaiori and Papûan types in the Western Pacific—Solomon, New Hebrides, New Caledonia, Loyalty, Fiji Archipelagoes. For the Sawaiori element of these mixed peoples, must have come also from Samoa, it being obvious that, had Samoa been peopled, for instance, from the Solomon or New Hebrides groups, the Samoans and all the other Sawaiori would show Papûan blood.
3. The total absence of Sanskritic elements in the Sawaiori languages. Yet these elements have been current in the cultivated languages of Malaysia—Malay, Javanese, Balinese, Madurese, for more than 2,000 years, probably even before the arrival of any large numbers of Malaysians in Madagascar.‡
4. The absence of Mongolian blood in the Eastern Pacific islands. It may, I think, be safely affirmed that the pure Sawaiori type betrays no traces of Indo-Chinese Mongolian elements, though these have been present in Malaysia from pre-historic times.§ This throws back the first Sawaiori dispersion from the traditional island of Bulotu,‖ eastwards to an incalculably remote period. It also confirms my third proposition (p. 259) that "the large brown race of Eastern Polynesia consists exclusively of the Caucasian element."

25. That there are no Mongolian elements in the Sawaiori stock seems further evident from a comparison of the physical appearance of these peoples. Thus the Eastern Polynesians are one of the tallest races of mankind; their average stature being

* *See* Stanford's "Australasia," pp. 613–14.

† Hale, of Commodore Wilkes' exploring expedition; de Quatrefages, Flower, Whitmee, &c., all concur in this view.

‡ The traces of direct Hindu influences in Madagascar are very slight, and in the Malagasy tongue Crawfurd failed to detect more than six Sanskrit words, two at least of which seem very doubtful.

§ Here there is of course no question of the Mikronesian islanders, who are a decidedly mixed race with Mongolian, Sawaiori, Malay, Tagala, possibly even Papûan or Negrito elements. (*See* Stanford's "Australasia," pp. 617–18.)

‖ By de Quatrefages, Fr. Müller, and others, on insufficient grounds identified with the present island of Bouru. (*See* "Australasia," p. 612.)

no less than 5 feet 10 inches.* But many of the Malaysian peoples, and especially the typical Malays, are much below the medium size, averaging no more than 5 feet 2 or 3 inches in height. On the other hand it has been seen that the typical Malays bear the very strongest resemblance to the typical Mongolians of the Asiatic mainland, also a low-sized race.† Hence the small stature of the Malays is to be explained by a larger infusion of Mongolian blood; the larger size of the Eastern Polynesians by the absence of Mongolian blood.

26. But it may be objected with Crawfurd, that in the Sawaiori languages, "the Malayan ingredient is extrinsic,"‡ and due to recent contact with the Malays and Javanese. To this I reply that, on the contrary, the Malayan ingredient in these tongues is intrinsic and fundamental. We have already seen that there are no Sanskrit elements in Sawaiori, which could scarcely be absent had the common Malay words§ been of recent importation. The present state of the Indo-Pacific numerals, as in subjoined table, will further show convincingly that the common elements are organic.

* De Quatrefages, Topinard, Prof. Flower, etc., etc.

† According to Dr. A. Weisbach's recent measurements of 200 individuals representing 19 different races from every part of the world, the Malaysian Tagalas rank *lowest* in the scale next to the Hottentots (1562 mm.) and the Polynesian Maoris *the very highest* (1757 mm.) Next to these come the Kaffirs (1753) followed by another Polynesian race, the Hawaiians, with 1700 mm. But taller than the Hawaiians are the Tahitians and Marquesas islanders (1762) ranking in Topinard's tables ("Anthropologie," chap. V.) as the highest race on the globe next to the Patagonian Tehuelches (1781.) Here the normal Malay appears in the lowest class with 1596. ("Körpermessungen verschiedener Menschenracen," von Dr. A. Weisbach Regimentsarzt im K. und K. österr-ungar. Nationalhospital zu Constantinople. Berlin, 1878.) It may be incidentally mentioned that great importance attaches to Dr. Weisbach's studies, which promise to supply the materials for a fresh classification of mankind according to its physical characteristics. "Demgemäss erfolgte auch die Eintheilung der Menschenracen in Kurz-Mittel und Langköpfe, ferner und, je nach der gegenseitigen Länge der Arme und Beine in *langarmige* (die Arme länger als die Beine), in *gleichgliedrige* (beide gleich lang) und in *Kurzarmige* (die Arme Kürzer als die Beine) aus welcher Eintheilung in Ganzen 18 Varietäten hervorgingen. Davon stehen die langarmigen prognathen Kurzköpfe dem Typus der anthropomorphen Affen am nächsten, dagegen die Kurzarmigen, orthognathen Langköpfe demselben am fernsten und haben daher *die höchste Stufe des Körperbaues* erreicht." (Dr. Karl v. Scherzer, 'Resultate auf dem Gebiete der Anthropometrie,' in Petermann's "Mittheilungen," 25 Band, 1879, iv. p. 151.)

‡ "Dissertation," p. 7.

§ Malay is full of Sanskrit terms for the most familiar objects, such as day, sun, head, chief, country, &c., and it has quite 5 per cent. of Sanskritic besides Dravidian and other Indian elements. But not one of these words has found its way to Eastern Polynesia; hence they cannot have been current in Malaysia when the dispersion eastwards took place, or even when the later Malay influences, according to Crawfurd's assumption, made themselves felt in the Pacific islands. At least it seems otherwise incredible that not one of such familiar Sanskrit terms should have succeeded in finding a home anywhere amongst the Eastern Polynesian tongues.

INDO-PACIFIC NUMERAL SYSTEM.

	1	2	3	4	5	6	7	8	9	10	100	1000
Malay ..	sa ..	dawa	tiga ..	ampat	lima	anâm	tujuh ..	dalapan ..	salapan ..	puluh	ratus .. / saratus	ribu / saribu.
Manatoto	nehi	erûa	etâlu ..	ehâat	lema	nâen	hetu ..	walu ..	siôh ..	nulu ..	atus ..	—
Gorontalo	ointa	oluo	otohlu	opatto	olimo	olomo	opitu ..	oalu ..	otieyo ..	mopulu ..	mahèlutto	—
Engano ..	bahai	adua	akalu ..	aopa	alieba	akiena	alieba-adua	alieba-akalu	alieba-aopa	tahapulu	aliemai-tekka ..	—
Mentawey	sara..	donga	telo ..	epat	lima	enen	pito.. ..	walo ..	siwa ..	pulu ..	siegatu ..	—
Samoan ..	e tasi	e lua	e tolu..	e fā..	e lima	e ono	e fitu ..	e valu ..	e iva ..	e sefulu ..	e selau ..	e afe.

Here it will be noticed that the word for five (*lima* with dialectic variations) pervades the whole area. The original meaning of this word was "hand," a meaning it still retains in Samoan, Bugis, Kissa (*liman*), and some other primitive Malaysian tongues, being in fact a relic of the quint system already alluded to. But this meaning is lost in Malay, Javanese, Malagasy, etc., where *lima*, retained as a numeral, has been replaced in the sense of *hand* by *tangan, tahan, tanghan*, etc. Here, therefore, it is the Samoan that explains the Malay, and not the Malay the Samoan. Hence so far from deriving in recent times from Malay, Samoan comes nearer to the original source whence both derive.

27. Observe further that in the Samoan, which is the typical Sawaiori language, the numerals are throughout accompanied by what grammarians call the enunciative particle *e: e tasi; e lua*, etc. Calling it by this grand name simply means that for the grammarians its original sense is lost. But a glance at our comparative table will not only enable us to recover this original sense, but will also throw light on other points in which we are more immediately interested. The *erûa, etâlu, châat* of the Manatoto (Timor Island), and the *o-inta, o-luo, o-tohlu, o-limo*, etc., of the Gorontalo (North Celêbes)* show that this "enunciative particle" was also originally a prevailing feature of the western or Malaysian numeral system. Its true meaning is moreover revealed by the Malay forms sa-ratus, "one hundred," sa-ribu, "one thousand." Hence *e, o*, etc., are obviously relics of *sa, satu*, "one," and the Samoan *e tasi, e lua*, simply mean "a one," "a two," etc., as we still say in English, and Malay "a hundred," "a thousand," forms pointing back to the time when the numerals were still purely concrete conceptions. They are still at the concrete stage in Samoan, but have reached the abstract in Malay; consequently here again the Samaon does not derive from, but stands on a lower or more primitive level than the Malay. The Samoan *e sefalu* is specially remarkable, for here we have the enunciative unconsciously repeated twice over in two stages of phonetic decay, the expression being really equivalent to *sa-sa-fulu*, "a-one-ten." The form *se* at the same time clearly connects *e* with *sa*,† and the

* Compare also the Engano forms in same table: a-dua, a-kalu, a-lieba, etc., for sa-dua, sa-kalu, sa-lieba, etc., and notice particularly the curious mixture of the earlier quint and later decimal system in this language. Thus alieba-adua = 5 + 2 = 7, alieba-akalu = 5 + 3 = 8. The form *tahapulu* = 10 is also very remarkable, and can only be explained by reference to the Samoan, which shows that *taha* = *tasi* = one; therefore tahapulu = "a ten," as in Samoan itself. Engano is spoken in an island off south-west coast of Sumatra, south from the Mentawey group.

† And the derivation of all these prefixes from *sa* is placed in the clearest light by the Bugis (south Celêbes) form; sô-pulo = ten. In Bugis it has dis-

needless repetition shows that the original sense has long been lost: a further proof of the vast antiquity and independence of the Sawaiori tongues. We therefore conclude that, however few they may be, the common elements in the Indo-Pacific languages are organic and not borrowed, consequently that these languages really form a linguistic family in the same sense that the Aryan or Semitic are linguistic families. The fact that these common elements are few, on which Crawfurd builds so much, simply means that the dispersion took place at a vastly remote period, a conclusion which has also been arrived at on other considerations.

28. A further proof that the Sawaiori represent the primitive Caucasian element of Malaysia, is afforded by the present state of the Malaysian populations. It is evident that, if our assumption be correct, there must now be present in the Archipelago, various gradations of the so-called Malay type, some approaching, others departing more and more from the Sawaiori type—that is, some with a greater, others with a less infusion of Mongolian blood. That such is the case, Yunghuhn and the French Anthropologists, Broca and Dr. Hamy, have long maintained. Apart altogether from the dark Papûan and "Alfuro" peoples of the eastern islands—Floris, Ceram, Gilolo, Timor, Key, Mysol, Aru, etc.; they speak of a pre-Malay and a Malay element in the western islands, and if by Malay we may understand a larger, by pre-Malay a slighter admixture of Mongolian blood with the primitive Caucasian stock everywhere present,*

appeared from all the other lower numbers, but reappears in the form of *si* in the higher. Thus: si-ratu = 100, si-rôbu = 1,000, si-lasa = 10,000. But in 100,000 we have the original *sa*: sa-koti. Traces of the same numeral prefix occur also in the languages of the Philippine Islands. Thus:

	three.		*ten.*
Tagalog of Bataan ..	ta-telo = sa-telo	..	sampô = sa-pulo.
Pampangan of Zambales	a-telo „	..	a-pulo „
Negrito of Mariveles ..	ta-telo „	..	sampô „
Negrito of Zambales ..	ta-telo „	..	giampo „

(from A. B. Meyer's tables in "Die Negritos der Philippinen," p. 5). The alliterative form, *ta-telo*, is interesting, as explaining the otherwise inexplicable ordinary Tagalog form, *tatlu*, which now appears to be obviously a contraction of ta-telu = sa-telu. The *ta* may possibly even point to the more primitive Malay form satu = sa, in which case the dental would be accounted for, without supposing it to represent an older sibilant. In *sa-m-pô*, we have *pulo* contracted to *pô*, and the insertion of a euphonic *m*, as in the alternative Malay form *sambilan* for *salapan* = nine. In *a-pulo* the *s* disappears as in the above quoted Engano forms. All these are, therefore, surviving fragments of the prefix *sa* or *satu* universal in the Malay numeral system before the dispersion, and still preserved throughout in the form of *e* in the Samoan alone.

* The reason why the Caucasian element must be held to be everywhere present in Malaysia is of course the total absence of Indo-Chinese monosyllabic forms of speech from this area. Had any pure Mongolian communities been formed in any part of the Archipelago, languages resembling the Burmese Siamese, or Annamese would now be spoken in those places.

the distinction may so far be accepted. That there really exist such varying types as would result from these varying fusions, there can be no doubt. We have on the one hand Battas, Passumahs, Lampungs of Sumatra; the Bornean Kayans, the natives of Bali, Celêbes, Nias, and especially the Mentawey islanders, a tall muscular race, with well-modelled torso, long head, rather oval features, high forehead, straight nose, horizontal eyes, a ruddy or light cinnamon complexion, long hair of a fine texture inclining to a brown shade, and beard often fairly developed.* These are Dr. Hamy's pre-Malays, our Caucasians slightly, though still diversely affected by Mongolian admixture. On the other hand, there are the Malays proper;† the Javanese, Sundanese, Madurese, Rejangs, Atchinese, some of the Gilolo and Celêbes peoples, and the Tagalo-Bisayans of the Philippine Islands. These are Dr. Hamy's typical Malays, and our Caucasians far more largely affected by Mongolian elements; the essential difference between the two views being that I insist on the presence everywhere of a Caucasian substratum for reasons already specified.

29. The pre-Malay peoples, as thus differentiated, Dr. Hamy proposes to group together under the collective designation of *Indonesians*, a term originally invented by Logan. But, what is to us of more importance, he connects these Indonesians directly with the Sawaiori race. "I think,"‡ he writes, "it may be admitted that the pre-Malay populations, Battas, Dyaks, &c., whom I propose to collectively call Indonesians, are nearly allied to the Polynesians properly so called, and that the two groups must henceforth occupy closely approximate places in our classifications."

* Dr. Hamy in "Bul. de la Soc. de Geographie," vol. xiii, 1877, pp. 491-3.

† For this type *see* note †, p. 277.

‡ "Je crois pouvoir admettre que les populations prémalaises, Battas, Dayaks, etc., que je propose de réunir sous le nom d'Indonésiennes, sont fort voisines des Polynésiens proprement dits, et que les deux groupes doivent désormais occuper deux places toutes proches dans nos classifications." ("Bul. de la Soc. de Geographie," vol. xiii., 1877, p. 491.)

Without employing the same terminology, de Quatrefages proclaims the same doctrine. "Both physical and philological characters show that the Polynesians are a branch of those Malay races which are divided into numerous groups of shades of difference, sometimes strongly marked. IT IS TO ONE OF THESE GROUPS WHICH ARE LEAST DISTANT FROM THE WHITE TYPE THAT THE NATIONS IN QUESTION MUST BE REFERRED." ("Human Species," p. 189.) Here the Polynesians (Sawaiori) are connected, not with the typical Malays as is usually done, but with the fair element in Malaysia, which is "least distant from the white type," that is, most removed from the typical Malays. In the typical Malay the Mongolian or yellow element predominates; in the "Indonesian" or "pre-Malay," it is found in continually decreasing proportion; in the Polynesian (Sawaiori) it is not present at all. Hence my objection to the term Malayo-Polynesian, which implies a mixture where there is no mixture either ethnical or linguistic.

30. In the same place he observes that the relations of these two races are becoming closer and closer according as more accurate knowledge is accumulated regarding them.* This remark has just been most unexpectedly confirmed by the account of the Mentawey people given us in his new work on "The Malay Archipelago" by C. B. H. von Rosenberg.† These islanders, occupying the Siboro, Péra and Pageh groups about 70 miles off the West Coast of Sumatra between 1°—3° 50′ S. latitude, he describes as not only almost totally distinct from the surrounding Malay peoples, but in physique, language, habits and customs strikingly like the Eastern Polynesians.‡ "On a closer inspection of the inhabitants the attentive observer at once perceives that the Mentawey natives have but little in common with the peoples and tribes of the neighbouring islands, and that as regards physical appearance, speech, customs and usages they stand almost quite apart. They bear such a decided stamp of a Polynesian tribe that one feels far more inclined to compare them with the inhabitants of the South Sea Islands."

31. This divergence from the ordinary Malay and approach to the Sawaiori type is fully borne out by the illustrations of some Mentawey islanders, figured at p. 185, vol. i, of von Rosenburg's work. The animated picture No. 2, might well be taken for a faithful representation of similar aquatic scenes in Eastern Polynesia, even to the fittings and shape of the prau in the foreground. The people are described as of "a somewhat light ruddy-brown complexion,"§ with fine black and slightly waved hair, full open eyes, symmetrical figure, rather above the middle size, large and muscular frames. Their weapons are the bow and arrow, their utensils mostly wooden, they are ignorant of the potter's art, a distinctive feature of all the Eastern Polynesians, whom they also resemble in the practice of tabooing certain articles of food and in the manner of burying their dead "recalling the customs of many Polynesian tribes."‖

* "Deux races dont les liens de parenté vont se resserrant de plus en plus à mesure que des connaissances plus précises s'accumulent à leur sujet." (*Loc. cit.* p. 491.)

† "Der Malayische Archipel," Leipzig, 1879.

‡ "Betrachten wir die Bewohner näher so fällt es dem aufmerksamen Beobachter gleich beim ersten Anblik auf, dass der Mentawejer nur wenig Uebereinstimmen, des mit den Völkern und Stämmen der Nachbarinseln besitzt, und dass er, was körperbildung, Sprache, Sitten und Gewohnheiken betrifft, beinahe isolirt dasteht. Er trägt so ganz und gar das Gepräge eines polynesischen Stammes, dass man ih weit eher mit einem Bewohner der Südsee-Inseln vergelichen könnte." (*Op. cit.* vol. i. p. 189.)

§ "Ein ziemlich helles Röthlichbraun." (*Op.* and *loc. cit.*) Mark the absence of the olive or yellow tinge so characteristic of the Mongolian and many Malay peoples.

‖ "Die Bestattung der Todten . . . erinnert an die Gebräuche mancher Polynesischer Volkstämme;" i, p. 196.

32. But decisive on the point is their speech, of which some specimens are given, and which von Rosenberg describes* in a general way as "very primitive and but little developed," fairly harmonious owing to the abundance of vowels (all strictly Sawaiori characteristics) and with the exception of some borrowed words possessing "not the slightest resemblance to the idioms spoken on the surrounding islands and in Sumatra." Its affinities are in fact with the Eastern Polynesian, as may be seen from the subjoined table of a few words, in which for the purposes of comparison I have given the restored organic Sawaiori or Oceanic forms, together with the present Malay. From a general study of von Rosenberg's lists I should fancy that about 10 per cent. of the Mentawey elements must be still common to the Sawaiori after an assumed separation of many thousand years:—

	Mentawey.	Organic Indo-Pacific, restored.	Samoan.	Malay.
Canoe	abak	abaka	va'a† = vaka	praau.
Mouth	ngu-ngu	ngu	gutu = ngutu	mulut.
House	lalep	lalapa	{ lau = lalu / fale }	ruma.
Sun	sulu	sulu	lā	mata-ari.
Rain	urat	ura, ula	ua = u'a = ula	hujang.
Stand v.	suruke	turaki	tula'i = tulaki	mānāga.
Banana	bako	bako	fa'i = faki	pisang.
Child	toga	tanga	tama	anak.
Hair	alei	lalanga	laulagi = laulangi	hujang.
Fish	ivat	ika	i'a = ika	ikan.
Twenty	dongapulu	sa-dua-nga-pulu	e luafulu	duwapuluh.
Fifty	limongapulu	sa-lima-nga-pulu	e limagafulu	limapuluh.

33. Here again we have a fresh proof that the common Indo-Pacific elements are not due, as Crawfurd supposed, to a later spread of Malay influences, for, except the last three words, those common to Mentawey and Samoan have disappeared from Malay. This language has also lost the primitive numeral infix *nga* still preserved in the Mentawey *limo-nga-pulu*, and in the Samoan *e lima-ga-fulu*, and in these alone of all the Indo-Pacific tongues of which I have seen specimens.‡

* "Sehr primitif und wenig entwickelt wegen, der vielen Vokalen . . . . ziemlich wohl-lautend . . . . nicht die mindeste Aenlichkeit mit den Idiomen die auf den umliegenden Eiländern und auf Sumatra gesprochen werden." (Vol. i, p. 196.)

† The inverted comma, thus (') in Samoan orthography, marks a sort of hitch or "break" as it is called in the voice, always denoting the elision generally of a *k* (in cognate tongues of a *t*) and no doubt also of other consonants; hence the secondary forms in this column. Note also that in Samoan, *g* is always uttered as *ng* in "ring."

‡ Its original universality is placed beyond doubt by its persistence in the Samoan numerals, from 30 upwards. Thus, e tolugafulu = 30, e ivagafulu = 90, e tolugalau = 300, e tolugaafe = 3000. There occur even such forms as e fāgaoa

34. The Mentawey islanders are thus brought into direct connection with the Sawaiori stock. But "the presence of a Sawaiori people, if such they be, on this extreme western verge of the Malay domain, cannot be accounted for by assuming a more recent migration across all the vast and often densely peopled Papûan and Malayan regions, from Samoa westwards to and beyond Sumatra."* Hence we must conclude that they are here Autochthonous, and that they stand in the same relation to the other Malayan races as do the Sawaiori themselves. They may be taken as the purest known type of Dr. Hamy's Indonesians, being probably the only section of the first Caucasian occupiers of Malaysia that has hitherto escaped contact and fusion with the later Mongolian intruders, their isolated position in the Indian Ocean at some considerable distance from Sumatra to some extent explaining this remarkable phenomenon.

35. A very few words will suffice for the dark races of the Oceanic area. The question of the mutual relations of the Indo-Pacific peoples, as already remarked, is very little affected or complicated by them except where fusions of different elements have taken place. This seems to have occurred to a small extent in Australia, unless the Australian be regarded with some anthropologists as itself a mixed type, a point foreign to our present scope. The extinct Tasmanians, notwithstanding marked peculiarities due doubtless to long isolation and special physical conditions, seem to have been a mixture of Papûans and Australians in proportions difficult now to determine, though perhaps it is safe to say that the former element, on the whole, predominated.

36. The geographical area of the Papûans themselves, as well as of their main subdivisions, has already been indicated, and here it will be enough to insist with Wallace and Flower on their fundamental difference as a type from the neighbouring Negritos. Great confusion has arisen from the loose way in which the two terms have been applied by popular and even by scientific writers. It will therefore be well to bear in mind that the two races are quite as distinct from each other as either of them is from the surrounding brown races. The Negritos are one of the very smallest people on the globe, averaging no more than 4 feet 8 inches in height, whereas the Papûans, with much variation, are, on the whole, above the middle size. Their cranial capacity rises to 80 cubic inches; that of the Negritos

=4 times a couple=8, in counting cocoanuts; e tu 'eagafulu=10 crayfish. This form seems to give a cue to its origin, which may be traced through aga=*span* to saga, as in limasaga=5 span. Thus e limagafulu would mean literally five span 10, *i.e.*, ten spanned or yoked together 5 times, hence 50.

* Stanford's "Australasia," p. 613.

falling to 74. The former are distinctly prognathous with platyrhine nasal index; the latter mesognathous and mesorhyne. The Negrito head is very short and round with flat and rather full forehead, small, straight, and narrow nose, turned up at the apex. The Papûan head, on the contrary, is often very long, always narrow, with retreating forehead, broad, arched and very prominent nose, with the tip prolonged downwards. The two have little, in fact, in common except their dark colour and frizzly or woolly hair; features which they share also with the African negro.*

37. The results so far arrived at may now be conveniently tabulated as under:—

I.—*General Scheme of Indo-Chinese and Inter-Oceanic Races.*

A—Dark Races.

I. Austral: Australian, Tasmanian?

II. Negrito: Aetas of Philippines, Samangs of Malacca, Andamanese, Karons of New Guinea.

III. Papûan:
- Papûans proper, Interior New Guinea, Arfaks, Nufors, Koiari, Koitapu, Aru, Waigin, Salwatty, Mysol, etc.
- Sub-Papûans East (Melanesians): Admiralty, Louisiade, New Britain, New Ireland, Solomon, New Hebrides, Loyalty, New Caledonia, Fiji.
- Sub-Papûans West, Gilolo, Floris, Ceram, Buru ("Alfuros"), Timor, Serwatty, Kissa, etc.

B—Caucasian Races (Brown).

IV. Khmêr Branch: Khmêrs proper, Khmêr-dom (Kuy) Sâm-rê, Xong, Stiêng, Charay, Cham, Prôon Banhar, Cedang, Muong, Khmû, Piâk, Lawa, Xien-Mai, Muang, Lolo.

V. Sawaiori Branch: Samoa, Tonga, Maori, Tahiti, Marquesas, Tuamotu, Hawaii, Tokelau, Ellice, Niuē, Motu, Kerapuno. Mentawey.

C—Mongol Races (Yellow).

VI. Chinese, Annamese, Siamese, Laos, Shan, Burmese, Khasia, Karen, Khyen, Talaing?

D—Mongoloid Races, (Olive-Brown) and Brown.

VII. Malayan Branch: Malays, Javanese, Sundanese, Madurese, Balinese, Atchinese, Rejongs, Tagalo-Bisayans.

VIII. Sub-Malayan Pre-Malayan or Indonesian Branch: † Battas, Passumahs, Singkel, Lampung, Dyak, Nias, Batu, Nassau, Sumba, etc.

Malaysians

* "Kurz, alles vereinigt sich um uns das Bild einer niedrigeren Entwickelung zugeben, aber einer Entwickeluug welche weder mit derjenigen der afrikanischen Neger, noch mit denen der Papuas und der Australier soviel bis jetzt ersichtlich, *irgend eine Aenlichkeit zeigt.*" (Virchow quoted by Dr. A. B. Meyer in 'Ueber, die Negritos oder Aëtas der Philippinen." Dresden, 1878, p. 43.)

† Although here grouped as Mongoloids, it should be noted that in these "Indonesians," the Mongol element is often very slight and always much less than the Caucasian. With the Malayan branch (VII) the reverse is the case. (*See* sec. 28, p. 280.)

IX. MIKRONESIAN Branch. } Pelew, Caroline, Marshall, Gilbert Ladrones.

Here the ethnical and linguistic grouping correspond in Division A (dark races). But we have seen that the Mongol peoples amalgamating in Malasia with the Caucasians and thus producing the mixed Mongoloid races D, in all cases laid aside their monosyllabic and adopted polysyllabic forms of speech. Hence in the other divisions the ethnical and linguistic grouping no longer correspond, a fresh proof that language is not necessarily a racial test. For these divisions the linguistic grouping will stand thus :—

38. II.—*General Scheme of Indo-Chinese and Indo-Pacific Languages.*

A.—INDO-CHINESE FAMILY (monosyllabic toned languages, exclusively on the mainland).

Chinese.
Annamese.
Siamese.
Lao.
Shan.
Burmese.
Khasia, &c.

B.—INDO-PACIFIC FAMILY (Polysyllabic languages spoken *recto tono*).

I. Mainland: Khmêr, Sâm-rê, Kuy, Charey, Cham, Stiêng Banhar, Lawa, Cedang, Muang, &c.

II. Oceanic.
- Malayan: Malay, Javanese, Sundanese, Balinese, Madurese, Bugis, Macassar, &c.. .. .. } Malaysian.
- Sub-Malayan: Batta, Lampung, Rejong, Dyak, Gorontalo, Tagala, Bisayan, Malagasy, Formosan, &c. .. .. } Malaysian.
- Sawaiori: Samoan, Tongan, Maori, Tahitian, Marquesas, Tuamotu, Hawaii, Motu, &c.
- Mikronesian: Pelew, Caroline, Marshall, Gilbert.

39. Here no place is given to a so-called "Mon-Annam" linguistic family, of which a good deal has recently been heard, and which is supposed to embrace the Annamese, Cambojan (Khmêr), and Mon or Talaing of Pegu, with assumed Kolarian affinities. But no such family exists, the Annamese and Khmêr belonging to totally different orders of speech, and the Khmêr having nothing in common with the Kolarian beyond perhaps a few verbal resemblances through the Talaing.*

40. Excluding the dark races, we therefore conclude that in

* "La langue Cambodgienne n'a rien de commun à l'exception de quelques mots annamites et Talains avec les langues mongoles de l'intérieur de la péninsule." (Garnier, i, p. 111.) And of the Kol, he remarks, at the same place that it "n'a plus de commun avec le Cambodgien que quelques mots venus par l'intermédiaire talain et une singulière délicatesse d 'inflexions dans le prononciation des voyelles."

the Indo-Chinese and Indo-Pacific area there are two fundamentally distinct racial types only, the yellow or Mongolian, and the brown or Caucasian; and corresponding to them two fundamentally distinct forms of speech only, the monosyllabic spoken *vario tono*, and the polysyllabic spoken *recto tono*. All the rest is the outcome of incessant interminglings going on for an indefinite period of time.

Résumé.

Recent ethnological research in Further India and Malaysia could not fail to affect the views hitherto entertained on the affinities of the peoples occupying this area. The discovery of a non-Mongolian fair type in Indo-China, connected in physique with the Western Asiatic type conventionally known as "Caucasian," and speaking polysyllabic untoned languages, introduces a distinctly new factor into the problem. An attempt is here made to show that this factor offers the true solution of the intricate questions connected with the mutual relations of all the Indo-Chinese and Inter-Oceanic peoples. The conclusions I have arrived at are briefly these:—

I. Two ethnical types, the fair and the yellow, have occupied Indo-China from the remotest times. The yellow or Mongoloid is represented by the Burmese, Khassias, Shans, Siamese, Laos, Annamese, mostly semi-civilised and settled, and all exclusively speaking monosyllabic toned languages. The fair or Caucasian, varying from white to different shades of brown, is represented by the semi-civilised and settled Cambojans or Khmêrs, Khmêrdoms or "Primitive Khmêrs," Chams and Kûys, and by the unsettled hill-tribes collectively known as Mois, Khâs, Penongs, or Lolos, all speaking closely related polysyllabic untoned languages. The historical continuity of the fair type is shown by reference to the bas-reliefs of Ongkor-Vâht.

II. Malaysia and Western Polynesia were originally occupied by two dark autochthonous types, for the present to be held as distinct—The Papûans mainly in the East, the Negritos mainly in the West. The Negritos are still represented by *disjecta membra*—Aetas in the Philippines, Samangs in Malacca, "Mincopies" in the Andaman Islands, Kalangs in Java, Karons in New Guinea, possibly by others in Borneo and Formosa. But elsewhere they have everywhere been rather supplanted than absorbed by the intruding fair and yellow races from Indo-China. The Papûans are still represented by compact masses—Nufors, Arfaks, Kiotapus, Koiaris, Waigiu, Aru, &c, in and about New Guinea; elsewhere they have rather been fused with than supplanted by the fair and yellow races, the fusion resulting in the

so-called "Alfuros" of Ceram, Timor, Jilolo, Mysol, and other islands west of New Guinea, and in the Melanesians of the Admiralty, New Hebrides, Solomon, Fiji, Loyalty, New Caledonia, and other islands east of New Guinea.

III. Western Malaysia is now almost exclusively occupied by the fair and yellow stocks from Indo-China, everywhere intermingled in diverse proportions, but the fair, as the earliest arrivals, everywhere forming the substratum. Where the yellow prevails, the outcome are the typical Malays of Malacca, Java, parts of Sumatra, Bali, Lombok, Coasts of Borneo, &c. Where the fair prevails, the outcome are the so-called "Indonesians," or "Pre-Malays"—Battaks, Passumahs, Atyehs, Lampungs of Sumatra, Dyaks and Kayans of Borneo, the natives of Celebes, Nias, Poru, &c. Thus the Malay is not an organic, but essentially a mixed type, oscillating between the fair and yellow, and at the extremes imperceptibly merging in both.

IV. But though the Malay is ethnically a mixed type, its speech is unmixed in structure, and fundamentally related to the Cambojan and other languages spoken by the fair races of Further India. This relationship is established on a sound philological basis, and the morphology of all these tongues is shown to be identical. The Indo-Pacific (so-called "Malayo-Polynesian") linguistic family is thus extended so as to embrace the polysyllabic untoned languages of Indo-China, as the source whence all the Oceanic branches derive. The total absence of the monosyllabic toned languages of the yellow races from the Oceanic area is accounted for, this remarkable fact affording the key to the order in which the prehistoric migrations took place from the mainland to the Archipelago.

V. The large brown race, in almost exclusive possession of Eastern Polynesia (Samoans, Tahitians, Maoris, Hawaiians, Tonga and Marquesas islanders), is affiliated, not to the typical Malays, but to that element in Malaysia which diverges most from the Mongoloid and approaches nearest to the Caucasian type. The migration of the fair race from the Archipelago eastwards is shown to have taken place at an extremely remote epoch, before or simultaneously with the arrival of the yellow races from Further India, consequently before the evolution of the Malay type proper. Hence there are no true Malayan ethnical elements and no Mongol blood in Eastern Polynesia. The direct connection of the Eastern Polynesians with the Indonesians of Malaysia is further confirmed on linguistic, physical, and ethical grounds.

Conclusion. Excluding the dark races there are in the Indo-Chinese and Inter-Oceanic area two fundamentally distinct racial types only—the yellow or Mongolian, and the fair or

Caucasian; and corresponding to them two fundamentally distinct forms of speech only—the Monosyllabic, spoken *vario tono*, and the Polysyllabic, spoken *recto tono*. All the rest is the outcome of incessant secular interminglings.

Discussion.

The President, regretting that the lateness of the hour made any full discussion impossible, called attention to the failure of the late Professor Bopp's attempt to connect the Malaoy-Polynesian languages with the Sanskrit. Mr. Keane's attempt to make the Khmèr language of Cochin-China a linguistic bridge to connect the Malay district with the interior of Asia represented a new departure in the subject, and it was to be hoped that Mr. Keane's theory would soon be examined with the attention it deserved. While admitting that the Polynesian features are often not very unlike the so-called "Caucasian" type, Dr. Tylor remarked that the difference of complexion was a serious bar to the hypothesis of their connection, which could only be removed by sufficient cause for such difference being assigned.

Mr. Distant said it was with no desire to criticise Mr. Keane's able paper, but rather with a view of strengthening the same, that he desired to deprecate too much value being placed on the engravings to be found in the two volumes of travels of M. Henri Mouhot. As is too well known, that unfortunate traveller died during his wanderings, and his drawings were sent home with his journals. But that the first must have been subject to some modification can be plainly seen from an inspection of the plate entitled "Monkeys playing with a Crocodile" contained in the first volume. Here, against all our knowledge of Zoology and Geographical Distribution of Animals, we find monkeys (called apes in the text) pourtrayed with *prehensile tails*. He would therefore suggest that the drawings of the monkeys must be altered before much weight can be placed on the portraits of the men to be found in that work.

The following paper was written abroad some ten years ago. It is crude, and has lain by ever since. In consequence of some conversation with Mr. Tylor, bearing on the subject, I sought out the paper and sent it to him, though I should not have spontaneously put it forward at the Anthropological Institute without expending a great deal more labour on it, for which I have not now time.—H. Y.

NOTES *on* ANALOGIES *of* MANNERS *between the* INDO-CHINESE RACES *and the* RACES *of the* INDIAN ARCHIPELAGO. By Colonel YULE, C.B. *

THE old Ethnologists used to class the Malay family as quite distinct from that of the Indo-Chinese races of the continent, and their language, which is not one of monosyllables, like that of nearly all the Indo-Chinese races, certainly marks a great present distinction. Yet we cannot but believe that they are closely connected, speaking at least of the Malayan race as it exists in the great Indian islands, whatever may be the truth as to the natives of the Polynesian islands, to whom the title has been often extended. We have seen faces of natives of Java on the one hand, and of natives of Burma and of the mountains on the eastern frontiers of Bengal on the other, as near identity as human faces ever are, whilst there are many particulars common to the customs and peculiarities of the two regions which seem to argue a close relationship. That able observer, Dr. Buchanan Hamilton, took this view, and so apparently did that most zealous student of the Eastern races, Mr. Logan, of Singapore, who carried to his too early tomb a vaster knowledge of the races and regions in question than anyone else is likely to accumulate in our day.

My intention in this paper is to detail, without much attempt at system or commentary, some of those common traits to which reference has been made.

One of these is the general aversion to the use of milk, which is common to the Indo-Chinese races, and to those of the Archipelago, including on the one side (as examples) the Burmese, the Kasias, the Nagas of our Bengal frontier, and even the Chinese themselves, on the other side, the Javanese, the Balinese, and the races of Sumatra. In Bali, where alone among the islands the Vedas still exist in some form, and the Brahmanical ceremonies, more or less corrupted, are maintained to this day, *ghí*, or boiled butter is necessarily known by name from the important place that it occupies in the Hindu rites and offerings, but from lack of milk a substitute is concocted from the cocoa-nut.†

On the other hand the love of putrescent fish, and of sauces of ancient and fish-like smell (such as are called by the Burmese

* Read April 29th, 1879.

† Sometimes, however, exceptionally, the Pandits of Bali do use cows' milk in the preparation of ghí for their ceremonial. (Friedrich in "Batav. Transactions," xxii, p. 51.)

ngapé, by the Javanese *trási*, by the Malays *Blácháng*, by the Siamese *Kápe*), is almost universal in both regions.

The wilful staining of the teeth, either by a specific process, or by the constant use of *pán* without subsequent cleansing is common to nearly all the races of Transgangetic India and the Archipelago. "Men ought not to have teeth like those of dogs or monkeys," say the Javanese; "Dogs and Bengalees have white teeth," says the Kasia; the Peguans "had a fancy to dye their teeth black, because dogs' teeth are white, whom they hate to imitate," we are told by Sir Thomas Herbert.*

The still more singular custom of covering the teeth entirely with a case of gold existed in the Middle Ages among a people of western Yunnan, as we know not only from Marco Polo, but from Chinese and Persian historians. And precisely the same practice has recently existed, if it does not still exist, in Sumatra, Timor, and Macassar.

I do not mention in the same category the filing of the teeth, as I cannot recall proof of the practice among Indo-Chinese tribes. Among the islanders it is very general; and a modern Dutch writer remarks as a notable feature in the countenances of the latter that when the teeth are shut, *unless they be filed*, the lips do not close; and he suggests that tooth-filing may have been an attempt to remedy this natural blemish.†

The extravagant enlargement of the ear-lobe is common to most of the tribes of both regions. The Mishmis and Abors of the Assam borders have perforations in the ear-lobe one inch in diameter. The Burmese often stick their large cigars in the orifice. Crawfurd speaks of the "enormously distended apertures in the ear-lobes of the women of Bali." The wild Dayaks of Borneo distend the ear-lobe by heavy earrings, till it reaches the shoulder or even falls below it.‡

Another coincidence is an idiom of language, the origin of which lies deep. It is one which is found most completely developed in the Malay language, though there are traces of it also in Javanese. We shall best show what it is by a quotation from the late venerable John Crawfurd:—§

"In the enumeration of certain objects, the Malay has a peculiar idiom which, as far as I know, does not exist in any other language of the Archipelago. It is of the same nature as the word 'head,' as we use it in the 'tail' of cattle, or 'sail,' in the enumeration of ships; but in Malay it extends to many

* "Crawfurd's Hist." i, 217; "Journ. As. Soc. Bengal," xiii, 620; "Herbert's Travels," p. 360.

† Van der Tuuk, "Notes upon Lassen," Utrecht, 1862, p. 17.

‡ "Journ. Indian Archip." ii, 236; "Crawfurd's Hist." i, 218; "Moor's Notices," p. 40.

§ "Malay Grammar."

familiar objects. *Alai*, of which the original meaning has not been ascertained, is applied to such tenuous objects as leaves, grasses, etc.; *Batang*, meaning 'stem,' or 'trunk,' to trees, logs, spars, spears, and javelins; *Bantak*, of which the meaning has not been ascertained, to such objects as rings; *Bidang*, which means 'spreading,' or 'spacious,' to mats, carpets, thatch, sails, skins, and hides; *Bíjí*, 'seeds,' to corn, seeds, stones, pebbles, gems, eggs, the eyes of animals, lamps, and candlesticks," and so on. He names eight or nine other terms, one or other of which is *always* used in company with the numeral, in enumerating different classes of objects, as if in English the idiom should compel us always to say "Two stems of spears," "Four spreads of carpets," "Six corns of diamonds."

Now precisely the same peculiarity is found in the Burmese language. In it also there exists a set of specific and technical terms, called by the grammarians *numeral affixes*, some one or other of which is always used as a co-efficient to the numeral, the term being selected according to the class under which the object falls, just as in the Malay. The Burmese affixes seem to be more numerous, and the classification which guides their application seems to be more arbitrary and sophisticated. Thus *Oos*, a root implying "chief," or "first," is applied to kings, divinities, priests, etc.; *Yauk*, "a male," to rational beings not divine: *Gaung*, "a brute beast," to irrational beings; *Pya*, implying superficial extent, to dollars, countries, dishes, blankets, etc.; *Lún*, implying rotundity to eggs, loaves, bottles, cups, toes, fingers, candles, bamboos, hands, feet, etc.; *Tseng* and *Gyaung*, extension in a straight line, to rods, lines, spears, roads, etc.*

It is very difficult to conceive that two tribes, not far apart in geographical position, who have in common such a singular and deep-lying peculiarity of idiom, are not sprung from the same stock. And the fact that a similar idiom exists also in Siamese and Chinese may be held to strengthen the argument. It is, I believe, a transfer of this idiom from Chinese to Pigeon-English that has produced the *piecey* which in that quaint dialect seems to be used as the universal numeral affix. (Two *piecey* cooly, three *piecey* dollar, etc.)

It is true that traces of the same tendency are found in Hindustani and Persian, especially in the official written style of *múnshis*, who delight in the surplusage of two *sheets* of letters; three *persons* of soldiers; five *rope* of buffaloes; ten *chains* of elephants; and even in our own tongue when we talk of so many *head* of cattle, so many *file* of soldiers, so many *sail* of ships, so

* Latter's "Burmese Grammar."

many *stand* of rifles. But still the practice is technical and exceptional; insomuch that I remember when a boy, in old Reform Bill days and when disturbances were expected in a provincial town, hearing it stated by a well-informed lady that a great proprietor in the neighbourhood was so alarmed that he had ordered from town *a whole stand of muskets.*

If I am not mistaken, the propensity to give certain technical and appropriated titles to the pairs of certain animals, which had such extensive development in old English sporting phraseology, and still partly survives, had its root in the same state of mind, viz.: a dislike to abstract numbers. Some light is thrown on the feeling and on the origin of the idiom of which we have been speaking by a passage in a modern work, which is the more noteworthy because the accomplished author does not make any reference to the existence of such an idiom in any language, and perhaps was not aware of it.

"On entering into conversation with the (Red) Indian, it becomes speedily apparent that he is unable to comprehend the idea of abstract numbers. They exist in his mind only as associated ideas. He has a distinct conception of five dogs or five deer, but he is so unaccustomed to the idea of number as a thing apart from specific objects, that I have tried in vain to get an Indian to admit that the idea of the number five, as associated in his mind with five dogs, is identical, so far as number is concerned, with that of five fingers."* Thus it seems probable that the use of the *numeral affix*, whether in the Malay idiom or the old sporting phraseology, is an effort to realise this identity of abstract number by the introduction of a common concrete term.

The weakness of the marriage-tie, and the facility of divorce, is another feature common to the delineations of most of the tribes of both regions, and it appears to have remained totally unaffected by the introduction and general prevalence of Indian religion among the most civilised of their number, directly contrary as it is to the genius of Hindu society; just as the later influence of Mohammedanism has never been able, among either Malay or Burmese converts, to establish the seclusion of womankind, or the use of the veil. The marriage-tie in Java is, as Raffles happily expresses it, rather brittle than loose; it is easily dissolved, but whilst it remains it generally insures fidelity. Crawfurd mentions, in Java, a woman living with her twelfth husband. Among the Mantras, a rude people of the Malay Peninsula, we hear of men who have been married forty times. Among the Kasias "divorce is so frequent that their unions can

* Wilson's "Prehistoric Man," (1st ed.) ii. 470.

hardly be honoured with the name of marriage." Among the Dayaks, "many men and women have been married seven or eight times, before they find the partner with whom they desire to spend the rest of their lives."

Among many of the tribes of both regions, also holds the rule that the husband enters the family of the wife, living with her parents and working for them. Such is the rule among the Kasias, in some parts of Java, and among the Dayaks of Lundu, in Borneo.*

A singular custom of inheritance, which we find here and there in both regions, is probably connected with this brittleness of the marriage-tie, if it does not go back to a still ruder relation between the sexes: I allude to the succession of the sister's son in preference to the son. On the continent we find this remarkable custom among the Kasias of the Silhet Mountains, and in the Royal Family of Tipura, on the edge of the Ganges Delta; among the islanders it prevails among many families of the Sumatran Malays.†

The savage mania of hunting for heads, generally by nocturnal ambuscade, and of treasuring them as trophies, is found with almost identical circumstances among the wild Dayaks and Kayans of Borneo and Celebes, and the wild Kúkis, Nagas, and Garos of the eastern frontier of Bengal, whilst traces of the same exist among the Battaks and some other races of the islands. As the Dayaks naïvely expressed the matter to Mr. St. John: "The white men read books; we hunt for heads instead."‡

The practice of tattooing has been too generally diffused to build anything on its existence. But there is an application of it so peculiar and remarkable, that it is worth while to notice its coincident existence among races, both of the continent and of the islands. This consists in covering the skin from the waist to the knee with dark embroidery; in fact, tattooing *breeches* upon the body. In spite of a thousand years at least, perhaps much more of Indian religion and influences, every male Burman is thus adorned. In Borneo, among certain tribes, the women have precisely the same decoration which makes them look, when bathing, says Mr. St. John, "as if they were all wearing black breeches."

An allied custom of introducing pieces of metal and the like beneath the skin, whereby the body is supposed to become

* "Journ. As. Soc. Bengal," as above, p. 624; "Crawfurd's Hist." i, 91; "St. John's Life in Forests," i, 50.

† "Journ. As. Soc. Bengal," as above, p. 625; Buch. Hamilton in "Brewster's Edin. Journ." ii. 51; "Life of Raffles, (4to.) p. 435.

‡ "Life in Forests," i, 67. The Kúkis in their descents on Kachár used sometimes to carry off 50 heads in one night ("Mills's Report on Assám," Calcutta, 1854, p. cxiii.)

invulnerable, is mentioned by various mediæval travellers as existing in certain islands of the Archipelago; and in our own day such amulets have been extracted from the arms of Burmese on several recorded occasions.

A superstitious abstinence from certain articles of diet, which is hereditary and binding among certain families only, is found here and there with remarkably coincident circumstances, among the tribes of both regions. Thus among the Kasias: "Some individuals and families have a superstitious objection to different kinds of food, and will not allow such to be brought into their houses." Among the Battaks of Sumatra: "Certain families abstain from certain food; as one family from turtle doves, another from crocodiles, on the plea that they are descended from such animals." Among the Dayaks: "Several have an objection to eating the flesh of pigs, deer, and other animals, but it is because they are afraid of certain complaints (as skin diseases), and the custom becomes hereditary, as many families are subject to them; or it arises from the fear of going mad," etc. The reasons given are evidently, as usual in such cases, *ex post facto*.*

The conservation of the bodies of the dead, especially of dead chiefs, for weeks, months, or even years, before burning or burying, is diffused over all the regions of which we speak, and has extended to China. Thus it is in Bali, among a people professing Hinduism; in Burma, to a certain extent, among Buddhists, among the Kasias, Kúkis, Nagas, and Singphos.

The following passage from Crawfurd indicates a remarkable peculiarity. It applies strictly to the Burmese, as well as to the islanders of whom he speaks: "The salutation by touching the lips is wholly unknown to the Indian islanders. The parallel ceremony with them both expresses and implies *to smell*. This is universal among all the tribes. The same term always expresses, in every language, the action of smelling, and this singular mode of salutation. The head and neck are the usual objects of the embrace, the performance of which is always accompanied by an audible effort, corresponding with its literal import."†

Another very notable custom is the association of the whole of the families of one village or community in one or in several great houses or barracks. This appears to be general among some of the Dayak tribes of Borneo. St. John mentions one such barrack-house of the Sibuyan Dayaks on the Lundu River which was 534 feet long, and contained 500 souls; whilst

* "Journ. As. Soc. Bengal," *n.s.*, 623; Van der Tuuk, *n.s.*, 76; "St. John," i, 72.

† "Hist." i, 100.

another village, of the Kanowit Dayaks, consisted of two houses, one of which was 200 feet, and the other 475 feet in length, with posts 40 feet in height, and 18 inches in diameter. The custom is also found among the rude natives of the Pági Islands off the West Coast of Sumatra, and among the people of the Korinchi Valley in the interior of that island. The very same practice is found among the Singphos, north of Burma, and among the Mekirs and Mishmis of the Assam Border. The single houses of the Mishmis contain from 80 to 160 persons. The Mekirs have the peculiarity that their barrack is not divided into apartments as in the other cases, but is merely a great hall.

In Borneo, as well as among the tribes of the Assam frontier, which we have just mentioned, we find also in each village one or more public halls, used for public ceremonies, but which also form the dormitories of the unmarried young men of the community, and serve thus as a sort of main-guard to the village. And in these halls, both in Borneo and in Assam, is often suspended the treasure of trophy skulls. Hence St. John often calls them "head-houses," sometimes "bachelor-houses." The same institution, or nearly so, seems also to exist among the Battaks of Sumatra.

Both where the barrack system prevails, and where it is absent, the custom of erecting the village dwellings on piles or bamboo posts at various heights above the ground is very general, from the frontiers of Tibet to the islands of the South Sea.* The late Mr. Crawfurd, in his great work "The History of the Indian Archipelago" (i. 159, *seq.*), after mentioning that the Malays and most of the people of Sumatra, Borneo, and Celebes build on piles, whilst the Javanese, Balinese, and some others build on the level of the ground, proceeds to say: "The distinction . . . has its origin in the different circumstances under which the two classes exist, and their different state of society. The maritime tribes inhabit the marshy banks of rivers and the seacoast, and for the purposes of health their habitations *must* be raised from the ground. . . . The superior salubrity, natural to the well-cultivated countries of the agricultural tribes, renders the precaution of building on posts unnecessary," etc.

But some curious facts seem to show that, however the difference of practice may have originated, it has now got as it were into the blood, and may almost be regarded as a test of race, having often no traceable relation to local circumstances. The Bengalee inhabits a marshy country; his villages are for several months of the year almost lacustrine; but I think I am right in

* The remainder of this paragraph appeared some years ago in a letter of the writer's, printed in the "Athenæum."

saying that he *never* builds on piles; his floor is always the lap of mother earth; on the other hand the Indo-Chinese tribes on his eastern border, as far as I have seen them, *all* build on piles, though many of them inhabit mountains in place of marshes. In Silhet, for example, a region of vast swamps, inhabited by Bengalees, up to the very base of the mountains, the villages (unless they be of Indo-Chinese colonists) are built on the earth. The moment you enter the mountain country of the Kasias you find the houses elevated on piles, though in this case the height of the piles is small. Further south, the Khyens of the Arakan Yoma chain, at a height of 2,000 or 3,000 feet above the sea, raise their cottages on lofty stilts of bamboo. Their neighbours, the Burmese and Karens, always raise their houses from the earth, whether dwelling in high ground or low. Even in Java, whilst the true Javanese builds on the ground, the people of the Sunda mountain districts, a different race, raise their dwellings on posts. Indeed the remarkable difference in this respect between the Javanese and Malays may be an indication that they are *not* so closely related as is generally supposed. There are indeed some other notable points of difference, but combined with such similarities that the theory of a mixture of race in the Javanese would perhaps best account for the facts.

The modern discovery that the system of piled habitation was practised in lacustrine sites, at a remote period, by the inhabitants of Switzerland and North Italy, as well as other regions nearer home, is full of interest in regard to this subject. I have not heard of any instance in which traces have been found of the system of barrack association. And it is hardly possible that traces should have remained of the use of piled habitations in *non-lacustrine* sites.

The practice of ordeal by water is found, with a singular exactness of agreement in the circumstances, at intervals over both of the regions spoken of. Here are three notices of the practice written at long intervals of time. Says Mr. Fitch, an English merchant traveller in the days of Queen Elizabeth: "The Pegus, if they have a suit in the law which is so doubtful that they cannot well determine it, put two long canes into the water where it is very deep, and both the parties go into the water by the poles, and there sit men to judge, and they both do dive under the water, and he which remaineth longest under the water, doth win the suit." Valentyn, the reverend author of the voluminous history of the Dutch Indies, argued with some Christian chiefs of the Moluccas on the necessity of taking active means for the extirpation of certain heathenish practices. His arguments produced no influence on the minds of the chiefs, who were convinced of the *utility* of the practices in question.

"If," said they, "for example, in a trial the evidence is so equally balanced that we are at a loss to decide, and pass no sentence, the people will murder each other. To avert this, we must pronounce in favour of him who can continue longest under water." And with reference to the Kasias: "The water-ordeal used to be a common mode of decision. The opponents, with much ceremony, plunged their heads under water on opposite sides of a consecrated pool, and he had the right who remained longest under water. I have been told that it was lawful to use the services of practised attorneys in this mode of trial, so that long-winded lawyers have as decided a preference in these regions as they may have elsewhere." Exactly the same practice is found amongst the Dayaks of Borneo.*

Again, the custom that a father drops his own name and takes one derived from that of his child is frequent throughout the Archipelago, as among the Dayaks and Malays of Borneo, and it is also found among the Kasias.

No one can doubt the common origin of the music and musical instruments of Burma and Java, vastly superior as they are in spirit and in melody to anything now called music in India proper. If they had their common root in the latter country, it is a root which seems to have left no traces on its original soil. This last alternative may, however, be the true one, for there are many facts of an analogous kind in reference to other arts. Thus we find in the public and religious architecture of the more civilised nations of Indo-China, and of the Archipelago, a propensity to indicate importance and dignity in timber palaces and places of worship, by a multiplication of pitched roofs rising one over the other. In Java this ensign of dignity has passed from heathen times to Islam, and marks the mosque in the principal villages. There also, as applied to private or palatial residences, the number of these roofs, appropriate to each class, is regulated by inexorable custom; and precisely the same is the case in Burma and Siam. No trace of such a system remains, as far as I know, in India proper. Yet judging from the similar forms in Tibet and the Himalaya, from the evident imitation of them in the stone temples of Kashmir, and from the sculptured cities in the bas-reliefs of Sanchi, I should guess that the custom was of Indian origin.

The same explanation applies, no doubt, to the extraordinary similarity of dramatic entertainments as found in Burma, Siam, and Java. Thus for example, Crawfurd says: "The only persons who can be facetious by the rules of the Javanese drama are *Samar* and *Bagong*, the redoubted friends and servants

* "Fitch in Purchas"; Valentyn quoted in "Crawfurd's Hist." ii, 273; "Journ. As. Soc. Bengal," n.s., 627; "St. John," i, 191.

of *Arjuna* and *Rama*. The acting of the persons who represent these characters is less constrained, more bustling, and more natural than that of any others. So much drollery is frequently displayed as to convince us that the Javanese have considerable comic powers." Of this passage I was ignorant when I wrote of the Burmese stage as follows: "A young prince was almost always there as hero, and he as constantly had a clownish servant, a sort of Shaksperian Lance, half-fool, half-wit, who did the 'comic business' with immense success among the native audience, as their rattling and unanimous peals of laughter proved. It was in this character only that anything to be called acting was to be seen, and *that* was often highly humorous and appreciable even without understanding the dialogue." Though the drama is practically almost extinct in India, I have no doubt that we have here a genuine tradition of the Indian stage preserved in those two distant regions, perhaps for more than a thousand years. These shoots of ancient Indian arts, still alive on different foreign soils, whilst the arts have perished in India itself, form a remarkable matter for enquiry but they do not properly belong to the subject of this paper.

There is a custom common to Burma and to Java, of showing reverence by squatting down in the presence of a superior, rather than by standing. In the interior of Java when a Dutch official, of whatever degree, passes along the road, the native wayfarers duck upon their heels till he is gone by. In Burma, in a like case, they drop upon their knees.

There is also a custom of dropping or concealing the proper name of the king. This exists in Burma (and according to La Loubère) in Siam. The various kings of those countries are generally distinguished by some nickname, derived from facts in their reign or personal relations, and applied to them after their decease. Thus we hear among the Burmese kings of "The king dethroned by foreigners," "The king who fled from the Chinese," "The grandfather king," and even "the king thrown into the water." Now this has a close parallel in the Archipelago. Among the kings of Macassar, we find one king known only as the "Throat-cutter;" another, as "he who ran a muck;" a third, "The beheaded;" a fourth, "He who was beaten to death on his own staircase."

I suspect, however, that both these latter customs may have come originally from ancient India, like the arts of which we have spoken. But this will scarcely apply to another example of common practice, with which I shall conclude.

A very peculiar forge-bellows, entirely different from those employed either by Hindus or by Chinese, is found, in form absolutely identical, in Arakan and Burma, in Sumatra, in Java,

in the Philippine Islands, and in Madagascar. The description of this bellows as given by William Dampier at Magindinao applies absolutely, I believe, to its form in the other countries named: "They are made of a wooden cylinder, the trunk of a tree about 3 feet long, bored hollow like a pump, set upright in the ground, on which the fire itself is made. Near the lower end there is a small hole in the side of the trunk next the fire, made to receive a pipe through which the wind is driven to the fire by a great bunch of fine feathers fastened to one end of the stick, which closing up the inside of the cylinder drives the air out of the cylinder through the pipe. Two of these trunks or cylinders are placed so high together that a man standing between them may work them both alternately, one with each hand."*

A deduction may be made, I think, from the existence of this peculiar bellows at Madagascar, viz.: that the migration from the Malay regions to that island, of whatever nature it was, took place after the working of iron was known in the former. The nature of the relation of the Malagasi language to the Malay is a much disputed matter. That there was *some* relation was known very early, and it is referred to by John de Barros. The identity of a number of Malagasi words with Malay or Javanese is admitted by everybody. But W. Humboldt thought that he also discerned deep-lying organic resemblances between the Malagasi and the languages of the Indian Archipelago. Crawfurd, on the other hand, entirely dissented from this, and argued strongly against organic relation, attributing the introduction of the Malayan vocables to some fleet of rovers carried accidentally by the monsoon to the shores of Madagascar. He reckons the whole number of common vocables to be 168. The list exhibits several compound words whose coincidences are too complex to be due to organic connection of the languages, and could only have come by bodily importation. And the existence of a few words of Sanskrit origin in the Malagasi, not only is a convincing argument for importation as against affinity, but seems to show that the communication, accidental or otherwise, took place after India had begun to influence the Archipelago.

It is worth noting, with reference to this controversy, as an instance how even such eminent and truth-loving men may be biassed, that Humboldt speaks of the Malagasis as "a White Race;" Crawfurd speaks of them as "Negroes," and that after quoting a description which is not a description of negroes.†

* Quoted by Crawfurd, i, 187.

† "Kawi Sprache," i, 323, *seq.*; "Crawfurd's Malay Grammar," i, cxlviii, *seq.*, cclxiv, *seq.*

The coincidences in manners and practices, that have thus been brought forward in detail, would singly be of no value as arguments for some original close bond of kindred between the races of the Indo-Chinese countries, and those of the Archipelago. Singly they are probably *all* to be found in remote regions of the earth. The Mexicans have the strange idiom of the *numeral affixes;* the Buraets of Northern Mongolia have the salutation by sniffing; the people of New Guinea and some of the Indian tribes of New Granada have the barrack-houses; various African and American tribes have the succession through the sister's child, and so on. But when thus accumulated they must surely be admitted to have great weight, and to be too numerous and striking, considering the comparative contiguity of the regions occupied by those races, and the physical resemblances which often occur among those of them the most remote from one another, to be due merely to the parallel development of isolated bodies of men in like stages of growth. But in putting forward the subject for discussion I have done all that it was in my intention or is just now in my power to do, and thus I leave it for the present.

Discussion.

The President agreed with Colonel Yule in laying stress on some of the customs mentioned, as proving ethnological connection between the Indo-Chinese and Malay districts, though allowing with Mr. Laing that others, such as the wearing of large ear-ornaments and the exogamous law of marriage, were of too wide distribution in the world to be so argued on. With reference to the air-pump bellows, he remarked that the present paper had elicited the fact of its use in Assam farther into the interior of Asia than had been before known. It thus perhaps spread from a custom in the Chinese region, extending into the Malay islands and even to Madagascar. Waitz had claimed it as known in West Africa, but the speaker, on examination, found the bellows used there by iron workers not to be the eastern air-pump, but a bellows of more ordinary principle. He further argued in support of Colonel Yule that a custom might be widely spread over the world, and yet have such strength and prevalence in two neighbouring districts to help in establishing connection between them. Thus with the systematic use of numeral-nouns (of which he gave further cases from Chinese and Japanese "four swing of portmanteaus" "three post of gods") its prevalence belongs more remarkably to the Indo-Chinese and Malay districts than to any others.

Colonel Godwin-Austen: 1.—We are all, I am sure, much indebted to Colonel Yule for putting together the mass of interesting notes on the similarity of customs of peoples so far removed as those of the Malay Archipelago and the Hills of the north-east frontier

bordering Assam. Some of these customs I have observed myself; I may mention the fondness for fish in a semi-putrid state. We find the Garos, Khasis, and Kookis using it for food. Vast quantities are caught in the great marshes at the base of the Hills, dried in the sun, and are bought up by the above people. The smell of this "*sukti*," as it is called by the Khasis, is most offensive to us.

2.—The extension of the ear-lobe is another custom found among the Garos, where the women carry such a weight of brass earrings, the lobe often reaching close to the shoulder, and I have seen several instances where it had eventually given way.

3.—The preservation of the dead in honey, noted by Colonel Yule as a custom of the Khasis, Kookis, and Nagas, is I think confined to the first, and then only for the chiefs and men of wealth. I never myself heard of it among any tribe of the two latter peoples.

4.—One of the most interesting of the points alluded to by Colonel Yule is the bellows. It is generally made of two hollow cylinders of bamboo, placed vertically, and each fitted with a piston rod, attached to a disc of wood, on which feathers are fixed diagonally round the circumference, and worked alternately. I have seen such bellows in the outlying villages in the Khasi Hills, towards the north, and in the Kuki and Naga villages it is the only kind used.*

Mr. KEANE thought that, independently altogether of any arguments based on analogous customs, it would be safe to argue for a close connection between the Malayan and Indo-Chinese races, on the broad ground of their striking physical resemblance. The French anthropologists, who, owing to political causes, had of late years almost monopolised the field in Cochin-China, were disposed to go even further, and often spoke of an absolute identity of certain Cambojan and Annamese nations with the peoples of the Eastern Archipelago. Thus the Cham (Tiame) of the extreme south-east corner of the Asiatic Mainland were regarded by Dr. Harmand as "Malais proprement dits." The whole coast from Cape St. James northwards to Canton he thinks was originally occupied by a race akin to the Malays. Garnier also connected the kings of Camboja with the Oceanic stock; while Martinet concluded that the Mois, the collective name of the Annamese wild tribes, "se rattachent de très-peu aux anciens habitants de la Malaisie." It was a remarkable fact, that of all the Indo-Chinese races the Cambojans (Khmêr) and the Kuys (Khmêr-dôm, or "primitive Khmêr," as the Cambojans called them) alone spoke polysyllabic languages. These languages had not yet been sufficiently studied, but when the old Khmêr inscriptions on the ruins of Angkor-wat and Angkor-thom came to be interpreted, much light would doubtless be thrown on the mutual affinities of all these peoples. Meantime it might not be premature to regard the polysyllabic-speaking Khmêr and Khmêr-dôm as possibly destined to afford the required missing link

* The Khasis for their large smelting furnaces use a much larger and more powerful bellows worked by the legs, standing. The smaller bellows are used for making *daos*, spears, hatchets, etc.

between the present inhabitants of Malaysia, and the monosyllabic-speaking sub-Mongolian Indo-Chinese races—Annamese, Siamese, Laos, Burmese, Khasias, Mishmis, Abors, and so on, to the great Tibetan tableland, whence all seem to have originally descended, following the course of the great rivers furrowing the Indo-Chinese peninsula.

Colonel YULE: I have explained the accidental way in which these notes have come forward at this Society, and I am not prepared to enter upon any argumentative defence of their suggestions, which were made years ago, and are only of a tentative kind. But it must be remembered that I have not put the argument, such as it is, merely on the ground of identity of certain isolated customs, but cumulatively: (1) On the number of such coincident customs; (2) On the strong physical resemblance (every now and then approaching to *identity* of feature) which individuals of the great sections of the races in question exhibit; and (3) On their approximation to each other on the map of the world.

As to that part of the notes which touched on the dramatic coincidences; the fact is that the notes do mix up two different classes of coincident circumstances, which I would have disentangled if I had found time to revise this paper before making it over to the Society. One of these, and the appropriate one, is the coincidence of manners pre-historic in origin; the other is a series of coincidences, of which we must call the origin historic, though unhappily we do not possess its history. These latter coincidences belong not only to the drama, but to architecture, ceremonial, music, and the like. In architecture, especially, we find great works in Java, like the Boro Bodor pyramid, with its thousands of yards of elaborate bas-reliefs; in Camboja, the vast temples described by my lamented friend Lieutenant Garnier and others; in Siam, the remains of Ayuthia; in Burma, the great brick shrines of Pagán, which I have myself described; all of these, though with very distinctive features, possessing characters in common that indicate a common origin—an origin that we see *must* have been Indian, and yet in India we cannot, with confidence, identify the source in any existing remains.

But these developed and historic arts do not properly belong to my subject, and the notes bearing on coincidences pertaining to them ought to have been eliminated. They are nearer to literary archæology than to anthropology.

I will make one more remark. My friend Colonel Godwin-Austen has told us that the feather piston-pump used as bellows, the diffusion of which is so remarkable in the Indo-Chinese countries and the islands, is found also in the Kasia hills, adjoining Assam. The fact is new to me (or I must have forgotten it), though my earliest service in India was in those hills, and though I remember well another kind of bellows, formed like a couple of gigantic semi-cylindrical accordions, worked by the weight of a man or woman, or both, standing with a foot on each semi-cylinder, and swaying the body alternately from one to the other. This is used habit-

ually by the Kasias in their iron-smelting, and I described it long ago in the "Journal of the Asiatic Society of Bengal." The fact that the Kasias possess also the air-pump bellows of Burma, Sumatra, the Philippines, and Madagascar, is a very remarkable circumstance, and to have elicited that fact is perhaps the most valuable result of my crude notes. I thank the President and the Society for the kindness with which they have listened to them, and discussed them.

NOTES *on* FETICHISM. By HODDER M. WESTROPP, Esq.*

I HAVE been induced to lay before the Society a few desultory remarks which have been suggested to me in reading Professor Max Müller's Essay on Fetichism, which forms part of his history of the development of religion.

I myself wrote some time ago a paper on the cycle of development of religion. In this I endeavoured to trace the different stages of religion from its lowest phase up to the highest culminating point in the idea of a sole supreme deity; but I went further: I traced the decline and decay of religion, for it is my belief that all things that have growth and progress have a cycle of development, that is, pass through the stages of rise, progress, maturity, decline and decay. Of this we have ample proof in the religions of Egypt, Assyria, Persia, Greece, Rome; they have had their rise, progress, maturity, decline, decay and utter extinction, and it appears evident that there is marked decline in the religions of the present day. In "Chips," vol. i, p. 23, Professor Max Müller also notices the inevitable decay to which every religion is exposed.

With regard to the development of religion, my view is this —At the base of the scale of the development of religion there is a stage of practical atheism, an ignorance of God, of which there are several proofs among very low and degraded races. As Captain Burton remarks, "Atheism is the natural condition of the savage and uninstructed mind."

The first step upwards is fetichism, as Mr. Tylor defines it, a belief that a spirit is considered as embodied in certain material objects, as a stock or stone, and that such objects are treated as having consciousness and power, and are to be worshipped, prayed to, and sacrificed to. This is undoubtedly a phase of mind peculiar to a very low state of culture, whether negro or Portuguese, and consequently is found among all peoples in that low stage, whether in ancient times, or among the negros, or among the ignorant and uneducated of the

* Read May 27th, 1879.

present day. The Portuguese "worshipping dauby images, handling rosaries," as Professor Max Müller describes them, with whom consequently the idea of a God was in abeyance, were as much Fetichists as the poor negro.

If we take the development of the individual man as an analogy to that of the human race, there must have been a time when the savage man had no belief in spiritual beings, as there is every certainty that a child of one or two years old, whose fallow mind may be considered a representative type of the savage mind in its earliest phase, has no idea of a spiritual being; there must have been a period when the mind of the savage man was in a blank and fallow phase, as we see in the child. Fetichism thus corresponds to that early stage in childhood when it attributes personality, its own life and consciousness to all material objects which it comes in contact with, a phenomenon often seen in children.

The next stage in the development of religion was nature-worship, or the adoration of the sun, moon, the elements, etc., then was evolved the personification of these, which led to idolatry, anthropomorphism, and polytheism; the development of religion passing through other phases in the ascending scale reached its highest stage in the final elaboration of the human mind, the idea of one absolute and supreme Godhead.

There is one phase of religion in the later stage of its cycle of development which I would wish to remark: a return to the lower beliefs of early ages, that is to fetichism. As man in the later stage of his cycle of development returns to second childhood, so religious belief returns to its primitive phase. Hence the reason we see the evidence of fetichism, in the later stages of religious development, and in the modern corruptions of the Hindoo religion, as remarked by Professor Max Müller, and, as he might add, in the Roman Catholic. For the doctrine of the real presence is in reality pure fetichism, as Mr. Baring-Gould defines it, "the concentration of spirit or deity in one point." The doctrine that a spirit is "embodied in, or attached to, or conveying influence through certain material objects," and hence the worship of stocks and stones. ("Primitive Culture," vol. ii, p. 144.)

Hume has, too, observed this phase. "It is remarkable," he writes, "that the principles of religion have a kind of flux and reflux in the human mind, and that men have a natural tendency to rise from idolatry to theism; and to sink again from theism to idolatry. The feeble apprehensions cannot be satisfied with conceiving their deity as a pure spirit and perfect intelligence, and yet their natural terrors keep them from imputing to him the least shadow of limitation and imperfection. They fluctuate

between these opposite sentiments. The same infirmity still drags them downwards, from an omnipotent and spiritual deity to a limited and corporeal one, and from a corporeal and limited deity to a statue or visible representation." Mr. Tylor makes a similar remark: "The history of religion displays but too plainly the proneness of mankind to relapse, in spite of reformation, into the lower and darker condition of the past."

Professor Max Müller observes that there are no traces of fetichism in the earliest hymns of the Vedas. These appear to me to have been written soon after the phase of nature-worship had prevailed, for as the Professor writes ("Chips," vol. i, p. 238): "In the Veda, the names of the so-called Gods or Devas betray their original physical character and meaning without disguise. The fire was praised and invoked by the name of Agni; the earth by the name of Prithri; the sky by the name of Dya. The sun was invoked by many names, such as Surya, Savitri, Vishnu, or Mitra. The moon was alluded to under the appellation of Soma." The Hindoos had, it is evident, then grown out of, and forgotten the phase of fetichism. It appears that at the time the Veda was written the phase of personification of the elements and powers of nature was beginning to be developed.

There is a passage in Professor Monier Williams' "Progress of Indian Religious Thought," which shows that fetichism, which appears to be an invariable first step in the development of religions in all countries, was developed in India in the Veda age. The following are his words: "It is certainly probable that fetish superstitions of the lowest type prevailed in India at the time when the Veda hymns were composed. Evidence of the existence of such superstitions is deducible from the Veda itself. In the Atharva-Veda divine powers are sometimes attributed to the ladle, and other wooden implements of sacrifice. Examples of this primitive form of religion are traceable in the superstitious observances of the Hindoos, from the earliest period up to the present day."

In an article on India in "Chambers' Cyclopædia," I found the following passage: "The Hindoos as depicted in their hymns (the Rig Veda) are far removed from the starting-point of human society, nay, they may fairly claim to be ranked among those already civilised communities experienced in arts, defending their homes and property in organised warfare, acquainted even with many vices which only occur in an advanced condition of artificial life." From this picture of Hindoo life in age of the Rig Veda, there would be consequently very little reason to expect to discover traces of fetichism in the Rig Veda. But if everything has a beginning, a first step in its progress towards

maturity, Indian religious thought must have had as an initial step a phase of fetichism in its first crude stages.

Professor Max Müller puts the questions: "Whence came the idea of anything invisible, say a spirit, to be embodied in certain material objects? How can we get trustworthy accounts of the present state of religious thought among savages and, what is most important of all, of its antecedents and origin?"

The only origin I would suggest for the idea of anything invisible to be embodied in "a certain material object" is that it took its rise in that analogous phase in childhood, when it attributes life, feelings similar to its own, to material objects. The savage (a child too) does the same. In considering the notices by travellers of religious thought among savages, we must take into account the period and the phase of thought developed at the period when the notice was written. The phase of thought among certain savages, for example, may have been different at the time of Captain Cook and other travellers, and at a later period. Even among savages there is evidently a progress in the development of religious thought, and in the course of even 100 years they may have advanced a good deal.

Professor Max Müller quotes Mr. Tylor's notices of the contradictory accounts of writers in their statements with regard to religious thought, viz.: in Germany, the most ancient instance on record, he says, is the account given of the religion of the Germans by Cæsar and Tacitus. Cæsar states that the Germans count those as Gods whom they can perceive, and by whose gifts they are clearly benefited, such as the sun, the fire, and the moon. Tacitus declares "that they call by the names of Gods that hidden thing which they do not perceive except by reverence," but it must be remembered that near 150 years intervened between the times of Cæsar and Tacitus, hence I would say the reason of the difference of phases described. In Cæsar's time the Germans were evidently in the phase of nature-worship. In the age of Tacitus they had, it is clear, grown out of that stage, and had developed a higher phase of religious thought.

We might remark the same contradictory beliefs, the same inconsistencies in the Vedas (though bearing the same name), for in them there appears to be different phases of thought, but it is evident this is from their being composed at different periods. In the earlier hymns nature-worship is evident, "a more childlike state in the history of man," as Professor Max Müller writes; while in the later portions we find a higher idea of divine and supreme power, such as that of Varnua as Lord of all—of heaven and earth. Professor Max Müller in his article on

the Veda assigns 1200 B.C. as the earliest time for the Vedic hymns, and in the opinion of the author of the article in "Chambers' Cyclopædia" on India, the latest writings of the Vedic class are not more recent than the second century. There must consequently have been many phases of thought and religious development, and many contradictory beliefs in a thousand years.

It appears to me that fetichism does not consist, as Professor Max Müller observes, in cherishing the bones or hairs of the departed, in the reverence of any particular object, as a stock or a sceptre, but it consists in attributing to any object, life, consciousness, a power to do good or evil, a power to grant prayers—in fine, a human will and mind. A savage when he prays to his fetish does not do so for the sake of cherishing it, it is for the purpose of obtaining an answer to his prayers from an object which he thinks is endowed with a human will and mind, and has a power to grant them.

Fetichism has two phases—the first phase is when a savage attributes life, consciousness, personality, a power to do good or evil, a power to grant his prayers to any object, a stone, etc., as he does to his father, or to some person in authority, but this does not imply that he considers his father, or the person in authority, a god or spirit. The savage merely recognises in the stone a power like that of a person in authority to grant his prayers; he has here no idea of a god or spirit; he transfers by analogy the power which he sees in a human being in authority to the stone or other object.

The second phase is when a spirit, a god, a power from on high is supposed to dwell in an object, and which consequently ought to be worshipped and propitiated; the savage again reasoning from analogy to the reverence and respect which is paid to a person high in authority and power (the Semitic name for god, El, means the powerful one, the person in authority). When the savage reaches this stage he must have some idea of spirit or power above man. This conception of a spiritual agency, as a writer in the "Times" says, grows gradually from the sight of invisible power in nature, and from the inevitable connection of the idea of force with the idea of will.

The idea of a superior power, a god in the mind of primitive man, is an induction resulting from his perceiving so many powers in nature superior to man, such as the sun, the sky, the storm, lightning, etc. The conviction thence arises in his mind of the existence of a power which he endows with personality, with a higher human will and mind, and which ought, reasoning from analogy, to be worshipped and propi-

tiated, as he reverences and propitiates a man high in authority and power.

The idea of a deity, a mind, an intellect, pervading and governing all nature by fixed and invariable laws, is that grand induction which arises alone in the philosophic mind, resulting from the proofs of the supremacy of law, the evidence of design and order, and the presence of beauty and harmony in the entire system of the universe.

The savage worshipping a rude stone that it may grant his prayers, belongs to the first phase of fetichism; presenting food to a tree, because the fetish, an invisible spirit, dwells in it, belongs to the second.

The instance of a negro tribe, mentioned by Professor Max Müller, which believes in gods or in a supreme god, is an instance of a tribe that has grown out of fetichism; and to use the words of Waitz, has "progressed much further in the elaboration of their religious ideas."

Fetichism may be, however, retained in a higher phase of religion, as Professor Max Müller observes, among the Hindoos, and as may be observed among the Roman Catholics of the present day, worship of the host, in which the deity is supposed to be present, is pure fetichism of the second phase.

In Professor Max Müller's lecture he remarks that the Hindoos could not have passed through the fetichistic phase, as there is no trace of fetichism in the Veda; he might just as well say the Greeks never passed through a Stone Age, as there is no mention of stone weapons in Homer. We have, however, plenty of evidence that the Greeks did pass through that stage, from the number of stone implements found in Greece.

A writer in the "Times" also remarks that everybody will not be satisfied with the lecturer's inference—that the earliest religious creed of uncivilised tribes cannot have been fetichism, because the Vedic hymns are free from that form of superstition. The Vedic hymns may have been written 3,000, 4,000, or perhaps 5,000 years ago. But we dare say Professor Max Müller believes that the human race was old even when the Vedic hymns were composed; and how can they bear witness to the belief of the unrecorded antiquity?

Everything must have had a beginning; language is traced to its first phase in inarticulate sounds, expressive of human wants, which were the roots and germs of words; writing to its earliest formation in picture drawing; nations to an early Stone Age, traces of which are found all over the world; and religion to its earliest phase of fetichism.

Professor Max Müller puts the question: How do people pick up the concepts of a supernatural power, of a spirit, of a god in a

stone or shell? The question may be also put, How do children, savages, uneducated people, pick up a belief in spirits and ghosts? These ideas appear to be natural instincts peculiar to human nature, which spring up spontaneously, like weeds, in the minds of the rude and uneducated all over the world; but we can no more discover their origin than we can tell why certain weeds spring up in a poor soil.

My position would be this: That those who believe in a primordial fetichism must take it for granted that human beings passed through a rude and primitive phase when their minds were naturally and instinctively endowed with certain vague ideas of spirits and ghosts, which seem to be the spontaneous outgrowth of minds in a rude and primitive phase in all countries and ages. In the same way we must take it for granted that every human being must have passed through a stage of infancy.

Mr. Tylor writes me: "It is very unfortunate that fetichism has come to mean two different things, viz.:—

"I. *Personification of objects*, or treating lifeless things as alive and personal.

"II. *Possession of objects* by spirits or souls, so that they become divinely active, and to be worshipped. It is in this second sense that I have most looked into fetichism, but in this sense you will see by primitive culture that I do not regard it as the original stage in the development of religion, but as a secondary stage arising out of animism. It is this animism, the doctrine of souls and spirits, arising out of a combination of the notion of life with the images seen in dreams, that I look upon as the fundamental fact of theology." He here gives, as I have already pointed out, the two phases of fetichism; the first of which appears to be the initial steps towards the development of religious thought; the other is evidently, as Mr. Tylor writes, a secondary stage.

Professor Monier Williams, in his "Progress of Indian Religious Thought," appears to me to describe the first stage of fetichism very accurately: "It seems that fetichism must be described as the religion of the childhood of the human race. A child makes a fetish of a doll, or of any other plaything when it animates it with life and personality, and talks to it as if it were a living being, capable of human feelings and affections. A savage makes a fetish of any roughly-carved block of wood or useful object, when he animates it with a soul, addresses it as it were capable of understanding human language, asks it for a boon and abuses it if his prayer is not granted." In the second stage of fetichism, when a spirit is supposed to dwell in an object, Mr. Tylor's term of "animism" might be more properly adopted.

Discussion.

Mr. Keane differed altogether from Professor Max Müller in so far as he regarded fetichism not as a corruption of a high form of religion, but as the starting-point of all religion. It was based essentially on ignorance, fear, and want; ignorance of the real causes of outward phenomena, fear of the consequences, want of the necessaries of life. It arose with the first awakening of conscious thought in the infancy of mankind, and was in principle an extension of the still faintly developed conception of the *ego* to external objects. Ignorant of the causes of lightning, floods, gales, and overawed by their injurious effects, the savage instinctively attributed life, will, intelligence, to these phenomena, and to the natural forces generally. In short, he personified, animated, endowed them with human faculties, and with the power of injuring or benefiting, whence the necessity of propitiating them. But all this seemed ultimately to resolve itself into the primary idea expressed by the words personification, animism, anthropomorphism, fetichism itself, words which in this connection he had never been able very clearly to distinguish in his own mind, and of which he would be glad to have accurate definitions.

Mr. Bertin remarked that this belief in a soul or shadow, for even material objects appears spread all over the world; as it is well known the Red Indians gave soul to the objects, and the shadow of the dead carried in his next life the objects buried with him. The same belief is noticed amongst the ancient Egyptians; this soul or shadow is called *Ka*, which is translated, perhaps wrongly, living "image," it should rather be "spiritual image." The Egyptians seem to have believed that the body and the soul had a *Ka*, for in the book of the dead, the soul (under the image of the bird) and the body are both taking the drink of life. The Egyptians used to swear by the *Ka* of the king, looked upon as more sacred still than the real body. The same belief existed to a very small extent among the Assyrians. But the Greeks carried it very far, as it is seen in Homer. Plato, in the Gorgias, seems to have reversed the theory: for him, this world is only the faint image, the shadow of one higher and more substantial.

He did not think there was any doubt that, as said in the paper, all self-grown religion started from fetichism, and decayed to be replaced by a higher religious form. Every special form of religion must grow and decay, as every man grows and dies; the humanity does not die with him; so survives religion. The new forms, the new *cultes*, as is very well expressed in French, borrow from the decayed ones, as the new generations borrow from the preceding ones.

On the KABĪ DIALECT *of* QUEENSLAND.*

(Extracted from a communication to Professor Max Müller, Oxford, by John Mathew, Esq., dated Mount Rothwell, Little River, Victoria, 10th Feb. 1879.)

DURING a residence of five years on a station in Queensland, I acquired some knowledge of an Australian dialect called by the natives who speak it, Kabī; I managed to learn something of its structure and to compile a vocabulary of some 600 words. Although I have no pretensions to being a philologist, I have remarked some peculiarities about the aboriginal dialects, about Kabī particularly, which so far as I am aware have been overlooked by writers on the subject.

Kabī is spoken in that part of the Wide Bay and Burnett Districts in Queensland popularly known as the Bunya Mountains. The Bunya is a conifer, the Bidwellia Araucaria, bearing a huge cone the seeds of which are covered with a fleshy part which the natives eat. Such is their liking for this edible cone that they assemble in large numbers from a radius of about 200 miles to feast upon it when in season.

Kabī, like most names of the dialects, is a negative. There are two or three other dialects closely allied to it, notably one called Wāka, and another called Dippil. Of the latter the Rev. W. Ridley gives a vocabulary of about 250 words. The subjoined remarks consist of striking characteristics, a few analogies, and some remarks on the grammatical construction. Aboriginal words from other dialects than Kabī, I have taken mostly from vocabularies of the Rev. W. Ridley and Mr. Bunce. I have used in Kabī words the Missionary Alphabet proposed by you.

The Australian dialects are, I believe, generally spoken of as *agglutinative*. If, however, it be possible for a language to be classed as *isolated* although having a majority of its words composed of two syllables, such a language is Kabī. Certainly the personal pronoun and the verb show inflections. But setting these instances aside, the words of two syllables are almost without exception accented on the first, the second syllable is perhaps merely euphonic, and I cannot think of any dissyllabic word which is separable into two distinct words. Again, the verb has certainly no termination indicating number, probably none indicating person, and the nominative, substantive, or pronominal, is almost invariably expressed. Further on in

* Read May 27th, 1879.

this letter I shall cite examples of the juxta-position of two words not monosyllabics, say a noun and adjective giving one adjectival idea and yet the words separable, and when used separately conveying meanings from which the meaning of the two in juxta-position is very evident.

The terminations in Kabī are abundant, but, a very few excepted, they have no significance. Perhaps also the manifest aversion which the native ear has to final consonants may account for the abundance of terminations. You say in your "Survey of Languages," p. 134, that Professor Schiefner, of St. Petersburg, remarks that no word in the Tush begins with *r*, and you say that applies to the Samoiedian, etc. It also applies to Kabī and I believe to all the Australian dialects; *l* as an initial letter is entirely absent in Kabī. The aspirate *h* as a single letter is wanting. There are no pure sibilants. The palatal *ch* as in "church" is wanting. As regards its final letters, they are limited to (1) the liquid, (2) the nasal *ñ*, (3) *n̄* dentated, that is to say, coalescing with a following subdued dental, and (4) vowel sounds. Again the nasal *ñ* and the aspirate *th* occur so frequently in all the aboriginal dialects as to be little else than sounds of convenience. The native ear being prejudiced to initial vowels, the nasal often introduces words which appear originally to have begun with a vowel, as *āvōñ* or *navōñ* (mother) In other cases it displaces *m* and *n*. If ever sibilants had a place in the language, dentals appear now to have usurped it. Medial gutturals seem of little moment, for they are captiously omitted or introduced. Duplication is excessively prevalent.

The dialects other than Kabī from which I have obtained analogies are—Kamilaroi, spoken in South West Queensland; Wiradhuri, spoken in Castlereagh and Wellington, New South Wales; Wailwun on the Barwon River; Turuwul at Port Jackson; Pikumbul on the Weir and Macintyre Rivers; Kingki on the Darling Downs, Queensland; and some others named after the localities where spoken. The Kabī verbs are given mostly in the imperative mood.

I. *Yena*, "go." Other Australian dialects, *yan*, George's River; *yannathin*, Melbourne; *yannayee*, Castlereagh; *Yakoi*, "come here!" may be from *ya* and *kari*, "here." In the imperative *yena* the stem vowel is *e*, but in all the other moods the stem vowel is *a*, as *yanman*, *yanmathi*, infinitive forms "to go," also used as indicatives, *yandiriū*, "to perambulate."

II. *Ba*, "come:" *bugaman* is another form of *baman*, "to come," indicative and infinitive of *ba*. There is a compound word *biyam-gaiyo*, meaning "to come back," in which *biya* is a prefixed adverb meaning "back," so

probably *gaiyo* means motion. The syllable *go* used after a word, whether attached or no I can scarcely say, with the signification of motion occurs frequently as *yangō*, "to go;" *kīragō*, "to go for fire;" *kuñ go*, "to go for water" etc.

III. *Bari*, "bring."

IV. *Ya*, "speak." In Australian dialect, *goăl*, Kamilaroi; *yumbunna*, Melbourne; *yauai* is Kabi for "yes," in Kamilaroi the word is *yo*. In Kabi *yamñoman* means "to rage, scold."

V. *Yelī*, "speak, tell;" *yelī* is probably from the same source as *ya*, it has derivatives *bīyelīman* (*biya*, "back," lit. "to call back") to "cooey," and *yelelīman*, "to speak quietly."

VI. *Burīmī* or *burīmathī*, "break." Australian dialect, *Kalburnin*, Melbourne. The past participle of *burīmī* is *burīn*.

VII. *Dhā* or *dhāii*, "eat." Australian dialect, *talī*, Kamilaroi; *thangarth*, Melbourne; *dagoon*, Snowy Mountains.

VIII. *Dhāñgā*, "tooth or teeth." Australian dialect, *tanah*, Condamine River; *dhāñga*, "teeth or mouth," Cunnamulla, West Queensland, "food," *bindha*, Kabi; *di*, Kamilaroi; *dhin*, Wiradhuri.

IX. *Dhā*, "ground, dust, country." Australian dialect, *taon*, Kamilaroi; *tagun*, Wailwun; *dargum*, North West Coast. Probably connected with the foregoing is *dhake*, "a stone;" *dhān*, "a black fellow."

X. *Kam*, "head, top." Australian dialect, *ga*, or *kaoga*, Kamilaroi; *kuboga*, Wiradhuri; *kabura*, Turruwul; *kabui*, Pikumbul; *kabui*, Darling Downs, Queensland; *katta*, West Australia.

XI. *Pabuin*, "father." Australian dialect, *buba*, Kamilaroi; *babbin*, Wiradhuri; *buba*, Wailwun; *biana*, George's River; *babunna*, Turruwul; *marmoonth*, Melbourne.

XII. *Kīvar*, "a man." Australian dialect, *kīwir*, Kamilaroi; *gibbir*, Wiradhuri.

XIII. *Balun*, "dead, failed." Australian dialect, *balun*, Kamilaroi; *balungall*, Kingki; *murmball*, Melbourne. Kabī *bumbālīn*, "fall."

XIV. *Warkun*, "crooked." Australian dialect, *wara wara*, Kamilaroi.

XV. *Warañ*, "wrong, bad." Australian dialect, *warai*, Wailwun; *weri*, St. George's River; *wirra*, Turruwul.

XVI. *Dhirañ*, "leg." Australian dialect, *durra*, Kamilaroi; *thirrang*, Wiradhuri; *durra*, Wailwun; *thurrong* ("the

calf") North West Coast; *tharra*, Grafton Range; *thirrong*, Melbourne. The word *dhirañ* being applied to the longest member of the body, to branches and roots of trees, to tributary creeks and to mountain spurs, it perhaps originally meant "long." This view is supported by the form of the Kabī word *gōran*, "long."

XVII. *Bindamathī*, "to marry."

XVIII. *Kawun*, "to love, like." Australian dialect, *kaai*, Kamilaroi; *caandeet*, Melbourne.

XIX. *Yañga*, "to do, make."

XX. *Wuru*, "before."

XXI. *Bubai*, "to stand."

XXII. *Na, naii*, or *numñan*, "to see." Australian dialect, *ngummi*, Kamilaroi; *nganna*, Wiradhuri; *narga*, Pikumbul; *nangana*, Melbourne.

XXIII. *Barīya, bariyir*, or *barītha*, "the top, above."

XXIV. *Dhurumi*, "to swell."

XXV. *Nienaman*, "to be, remain."

For some grammatical characteristics there is no article; adverbs do the work of conjunctions and prepositions. In substantives the same form is both singular and plural. What might appear to be case terminations are, I think, in most instances, terminations of euphony. Such terminations are interchangeable and numerous; hence if they were regarded as indicating case there would be multitudinous cases and declensions. The affixes *no* and *ro* frequently indicate possession but are not thus used exclusively. I shall now give a paradigm of the personal pronoun in Kabī.

		Singular.	Plural.
1st. Pers.	Nom.	*Nai, atdhu*, or *natdhu*, I.	*Nalīn*, we (you and I).
	Pos.	*Nanyuñgai*, my or mine.	*Nalīnnō, Nalinñur*, our or ours.
	Obj.	*Nanna* or *natdhu*, me.	*Nalīn*, us.
2nd. Pers.	Nom.	*Nindhu* or *nin*, thou.	*Nulam*, you.
	Pos.	*Ninyuñgai*, thy or thine	*Nulamō*, your or yours.
	Obj.	*Ninna*, thee.	*Nulambōla*, you.
3rd. Pers.	Nom.	*Nunda*, he, she, or it.	*Dhinabu*, they.
	Pos.	*Nundanō*, his, &c.	*Dhinabunō*, their or theirs.
	Obj.	*Nundabōla*, him.	*Dhinabubōla*, them.

Duals: *Nulam*, another and I; *bula*, you two.
Nupu, you all; *mitdhi*, self.

Adjectives are sometimes formed from nouns by affixing the syllable *ñur*, which means belonging to, made of, or like, as *wulwi*, "smoke," *wulwiñur*, "smoky;" *bōkka*, "horn, projection," *bōkkañur*, "horned," etc. Sometimes nouns and adjectives compounded or placed in juxta-position are used adjectively, as *kawun kabi* (lit. "desire wanting"), "indolent, lazy." Some-

times nouns and verbs are similarly employed, as *ñaiya balun* (lit. "breath failed"), "tired." The last example by adding *ira* becomes a transitive verb signifying "to tire." The difficulties in the way of conjugating the verb seem insurmountable; I doubt whether it can boast a passive voice. It has an infinitive generally in *man* or *mathi*, which is also a present participal and an indicative form. The past and future indicative are commonly indicated by an adverb or by the context. There is a termination *ra* expressing futurity, but occurring rarely.

There seems to be an interrogative or optative mood having only one tense. The imperative has only one tense and seems to be the root with a vowel affixed. The past participle is in *an*, *in*, or *un*, it is used sometimes as a past indicative and without a copula serves as a passive voice. This use is rare. I could furnish examples to substantiate the above remarks as well as to prove the following—that subjects of verbs get terminations almost as often as objects, and that objects of any one class, say datives, receive varied terminations. Observe the form which a naturalized verb assumes; the verb to *wash* becomes *washimkirañalithin*.

The syntactical order of words is subject, indirect object, object, adverb, verb. The adjective almost always follows the word which it qualifies.

Some of the idioms are noteworthy. The affections are attributed to the state of the stomach, *nōlla kalañur* (lit. "stomach good"), "cheerful;" *nōlla dhandarban* or *dhandarbathin* (lit. "stomach smooth or slippery"), "pleased;" *nōlla kiyaman* (lit. "stomach biting"), "sorry." Deafness is curiously confounded with madness, thus *pinañ gulum* (lit. "ear or ears blunt") means either "deaf" or "mad." Many feelings are named from their physical phenomena, such are *mī kurīn*, (lit. "eyes burning"), "giddy"; *mī kambīman* (lit. "eyes to hide"), "jealous"; *muru wōmbalīman* (lit. "nose uplifted"), "frowning;" *pīnañ aluman* (lit. "ears to die"), "to forget."

Palæolithic Implements *from the* Valley *of the* Brent.

By Worthington G. Smith, Esq., F.L.S., &c.*

Having last summer (1878) found a considerable number of palæolithic implements in the valley of the Lea, in the north-eastern part of London, I determined last autumn to search well over the valley of the Brent, in the north-western part of the Metropolis, both the Lea and the Brent being affluents of the

* Read June 24th, 1879.

Thames. My attention was especially directed to the valley of the Brent by the discoveries of General A. Lane Fox in the gravels belonging to the Thames at Acton, Ealing, and Ealing Dean.

As with the Lea, I have many times traversed nearly the entire course of the Brent; in this instance from Brentford to Twyford, and I have repeatedly examined the excavations in the valley. I have, however, only found a few palæolithic flakes in other than two positions. These positions are east and west of the banks of the Brent at Hanwell. Here there are two pits of considerable size, the surface at each place being about 80 feet above high-water mark. The larger of these two pits (known as Mr. Gibson's pit) is near to and west of the Brent, west of Hanwell, and close to the Greenford Road. It extends over some 20 acres of ground; 8 feet of the surface (consisting of loam and gravel) has been removed in past times from the entire surface, and the men now dig out an additional 22 feet, making about 30 feet of excavation in all. The base is seldom reached, and with the exception of having a greater quantity of tenacious red clay in its composition, the gravel of the Brent at Hanwell resembles the same material belonging to the Hackney Brook at Shacklewell, the Lea at Clapton, and the Thames at Acton and Ealing. It is intercalated with seams of fine river sand in the same manner as the above-mentioned gravels, and it has the same black ferruginous seams, but I have failed to detect any bones or molluscan remains, either near Hanwell or in any other position in the Brent valley.

The second pit (known as Mr. Seward's pit) is near to and east of the Brent, it is half a mile south of Hanwell, and lies on the east side of the Boston Road, towards Brentford; it has an extent of about 4 acres, and when it is excavated to a depth of 14 feet the London clay is reached. In both these pits I have seen flakes and cores *in situ*, as well as in the newly excavated gravel; the worked flints occur in all parts of the gravel, and they are more abundant in the Boston Road than in the Greenford Road pit.

In both pits a stratum of loam becomes in places intercalated with the gravel, so that in some places a distinct stratum of loam may be seen underneath gravel; this lower deposit is however not older than the upper, but of the same age, for I have seen the two seams confluent.

The gravel from the larger pit (Mr. Gibson's) has of late been spread over the roads to the west, as far as Southall, and in this material I have picked up several flakes, but no finished implements. In the pit itself I have been more successful, for in addition to flakes and cores, I here found in gravel just

excavated a massive pointed implement weighing 2 lbs. 4½ oz. The discovery of this implement was somewhat remarkable, for it came out of the lowest depth of the pit, some 30 feet beneath the original surface. It was disinterred from a stratum consisting almost entirely of oval pebbles, no large or sub-angular stones being present. As far as my experience goes it is very unusual to find implements in a stratum of this nature, and with one exception I have never met with any worked-flints from a deposit consisting entirely of oval pebbles. There is, however, a layer of this nature belonging to a lower terrace of the Lea, east of Stamford Hill, in the north-eastern part of London; and amongst the oval stones from this place I some time since found a much-rolled basal half of a well-made pointed instrument.

The gravel from the Boston Road pit (Mr. Seward's) has been carted away in large quantities, and spread over the roads at Cuckoo Hill, on roads between Ealing, Perivale, and Hanwell, and on one of the roads at Eaton Rise, near Ealing Dean. I have repeatedly and carefully searched over these roads, and the result has been the rescue of one massive ovate implement, perfect, seven pointed implements, all perfect or nearly so, two flakes worked to an implement-like form, and a large number of common flakes of all descriptions and sizes. The pit itself has produced numerous flakes and cores, and one perfect pointed implement found by a workman (instructed by me) in his sieve. Of the flakes, although I have given a large number away to friends, I still have 57 left. Neither implements or flakes have, however, been found by me without a good deal of very hard work and a considerable amount of walking about and searching, for I have several times been over the gravels for an entire day and found nothing.

The second heaviest instrument found by me in the Brent valley gravels weighs 1 lb. 6¾ oz.; average specimens of the remainder weigh about 9 ozs. each. The most massive flake weighs 1¼ lb., whilst the lightest flake which has three faces to its wrought side, and a distinct cone of percussion on its plain side, weighs only one-fifth of an ounce.

In excavations made near the present level of the Brent, palæolithic remains appear to be absent, or nearly so.

I have carefully searched in the Hanwell pits for specimens of bone, wood, hair, and old vegetable material, but at present without result.

It may be well to warn archæologists against supposing that gravel found in the roads of any particular district (especially in and near London) belongs of necessity to the spot where it is laid down. The contrary is often the case, and nothing is more

common than to find gravel from one place thrown down in another and perhaps far distant position. Hundreds of tons of Hertford and Ware gravel may be seen in the roads close to the gravel pits of Shacklewell and Clapton. Builders are now digging gravel at Battersea and Clapham, whilst in the neighbouring roads are deposited many tons of gravel brought from the neighbourhood of Dartford. The Shacklewell and Clapton gravel has been distributed over several districts about London, and the excavated gravel of Acton, Ealing, and Hanwell is taken in various directions. On the other hand a great deal of the gravel recently laid down at Acton has been brought there from a long distance. The explanation of this fact is that parish officials and builders are always ready to purchase gravel at the lowest price. I have known a penny per load turn the balance in favour of gravel brought from a distance. After some experience one soon learns to know the different gravels at sight, even when seen from a distance; the same experience will often teach one whether the drift under examination comes from a high or low river terrace.

A word of caution may not be out of place against giving too much weight to isolated facts—facts though they may be; and as an illustration of this I will mention in conclusion an experience of mine which would no doubt with some persons have served as a proof of the past existence of Tertiary man. In certain places near where I live, at Highbury, the London clay comes to the surface, and it is singularly free from stones. Now, whilst watching some excavators engaged in digging a drain last summer between here and Clapton, I saw a mottled stone sticking out of a clod just shovelled from a deep trench made in the London clay. On taking the stone out of the clod, it proved to be a very good, unrolled, ovate flint implement. How this isolated stone, and that an instrument made by man, got into the perfectly undisturbed London clay, I am of course unable to say for certain, but I can say that in the immediate neighbourhood there are palæolithic sands and gravels which at one time must have swept over the London clay. The specimen mentioned probably sunk into the wet clay at the time of the deposition of the neighbouring sands and gravels, in both of which strata it is common to find bands of London clay intercalated. But under any circumstances the complete isolation of this single instrument is very curious.

Discussion.

Mr. Lewis said the idea which Mr. Worthington Smith had so successfully worked out, of searching the newly-gravelled roads in the suburbs of London, had occurred to himself many years ago,

and, when passing a newly-gravelled road, he had always looked closely at it to see if he could find any palæolithic implements, and, though he had not followed up the idea in the systematic and industrious manner in which Mr. Worthington Smith had, he could confirm his statement as to the rarity of the implements. Just about five years previously he (Mr. Lewis) had found a very nice implement of an axe form on the Wickham Road, New Cross, which he was unable to exhibit as it was then in the collection of their distinguished ex-President, Dr. Evans; and from that time he had found nothing till a month or so before that meeting, when, being at Forest Gate (next Stratford) on business, he found much building going on, and the gravel, which came close up to the surface, being dug out for cellars, and from a heap of gravel so thrown out he took an implement of a pointed spearhead form (which he then exhibited), and which, as he understood, was the first recorded from that locality. It could not have been buried more than 7 or 8 feet below the present surface. He also exhibited for comparison a stone from the same heap, which, though of natural formation, was very like the worked implement in shape.

PORTSTEWART *and other* FLINT FACTORIES *in the* NORTH *of* IRELAND. By W. J. KNOWLES, Esq.*

I THINK it was in the summer of 1871 that my attention was first drawn to the sand-hills near Portstewart, by a friend who showed me an arrow-head he had found when walking among them. He had sat down on a stone to rest, and seeing flint flakes scattered about, looked around, and soon his eye rested on an arrow-head. Shortly afterwards I went in search of the place which he had described to me, and in walking over the hills, came on a large hollow or pit which was about 50 feet in depth from the surface of the sand, and fully 100 paces broad in the bottom. In the centre of the pit there was a little mound, on the top of which rested about a dozen small boulders, such as one could easily lift, and the surface all around was closely covered with flint flakes, cores and hammer-stones, among which were many scrapers and other manufactured objects. I brought away upwards of fifty on my first visit, and shortly afterwards went again, when I discovered other pits, some of which were smaller, but all were nearly similar in character. There was generally a little mound in some part of each pit with a few boulders on the top, and flakes and other objects scattered on the surface.

I repeated my visits at short intervals during the next two or

* Read June 24th, 1879.

three years, and collected a great quantity of manufactured flint objects, hammer-stones, bored-stones, broken pottery, teeth and bones of various animals and shells of different kinds, all mixed up with the flint flakes and wrought implements. The hunt after these objects was most fascinating. The pits never seemed to get exhausted of their stores. If I cleared them out to-day I was sure to get a new lot on my next visit. At first the place was a perfect puzzle to me. There was the little mound in the centre of the hollow with the few boulders on the top which had evidently been used as hearth-stones, and all around there was the evidence of a busy trade having been carried on in the manufacture of flint implements. Nothing seemed displaced, but everything appeared to be in the position in which it had been left. It really looked like a place that had not been long deserted. I soon found out, however, that the pits had not always remained as I saw them, for in some places at the sides I found little platforms with a floor more solid and of darker material than the surrounding sand, on which rested stones, flakes, and other objects similar in kind to those found on the surface of the mounds already mentioned, and on tracing those floors I found that they extended as black layers round the sides of the pits. On the top of the black layer, in many places, there rested a thickness of 50 feet of sand; in other places less. Ten feet, 4 feet, or perhaps only 2 feet would sometimes be found. I also soon discovered that the sides of the pits were constantly suffering from denudation, and that they were constantly becoming wider from the removal of material by the wind. In digging into the black layer I got flint objects, pottery, bones, and shells, similar to those that were found on the surface, all of which led me to the conclusion that the pits had been filled with sand until a very recent period; that the black layers represented the surface of the sand-hills at the time of the occupation of that place by the flint implement makers; and that the covering of sand was not heaped up suddenly, but by a slow and gradual process which was dependent on the rate of growth of the vegetation on those hills. The objects found in the pits had therefore dropped from the black layers. The hearth-stones represented dwelling-places, and the various remains would naturally be found in greatest abundance close to such spots. The stones and flakes would give protection to the sand below, whilst removal of the sand by the wind would go on freely on all sides, and cause the protected part to take on the form of a mound. Such is the interpretation I have given on several occasions of the nature and origin of the remains found so abundantly at Portstewart and elsewhere, and some excavations I have made during the past year confirm all I have previously said on the subject.

Of the various other places besides Portstewart, where similar remains have been found, Whitepark Bay, near Ballintoy, is one of the most important, but Castlerock, on the opposite side of the Bann from Portstewart, as also Portrush, Larne, and many other places on the north and east coast, in the counties of Derry, Antrim, and Down, have yielded considerable quantities. The sand-hills near Castlerock are only separated from those of Portstewart by the River Bann, and we may almost look on the two places as one. On the Castlerock side of the river, the same kind of pits and black layers are found as on the Portstewart side, and similar remains have been obtained from them; but it is strange that the flints, bones, and black layers, as far as I have been able to observe, are only found in those sand-hills which are removed about a mile and a-half from the mouth of the Bann. I believe that since the occupation of those hills by the flint implement makers, a portion of new land of the nature of a delta, from a mile and a-half to two miles in length, was formed at the mouth of the river, which has since become covered with sand-dunes, similar to those on the older portion. The sand-hills on the Castlerock side, about two miles from the mouth of the Bann, are still pretty rich in remains. In a recent excursion (June, 1879) of the Ballymena Naturalists' Field Club to that place, 200 manufactured flint objects were brought away by the excursionists. There are some pits of small size at Ballintoy, but the part which yielded the greatest supply of flints and bones is of the nature of a ridge or sand-bank close to the sea, and about 30 feet above sea-level. A floor or dark layer, from 3 to 12 inches thick, runs along the whole top, and there is only one small portion which has a covering of sand. The exposed portion has had its covering removed within a comparatively recent period. From Portstewart, Castlerock, and Ballintoy, the places where animal remains and implements are found buried up in the black layers, I think I may safely estimate the number of manufactured flint implements, obtained by myself and others, up to the present time, without taking any account of flakes or cores, at 2,000.

In examining the manufactured flint articles, scrapers are found to be by far the most numerous. They would amount to 60 or 70 per cent., and if some objects of irregular form, but used, I believe, for the same purpose as the scraper, were counted, the percentage would be much higher. The scrapers are of various forms and sizes, some being 3 or 4 inches long and others smaller than a finger nail. Some have been very carefully manufactured, the edge being of very regular outline, while a number have a less regular form with prominent teeth. Some have small tang-like handles with broad scraping edges, others have broad bases,

while the scraping edges are so small that they might almost be described as blunt points. Others again are chipped all over the back, showing as beautiful workmanship as the most finely finished arrow-head.

The scraper seems to have been the implement most required. It is found by farmers in the fields in considerable abundance, but is seldom lifted, as collectors do not want such poor objects, and nothing is bought unless it has elaborate workmanship like an arrow-head. I knew of one collector offering to sell scrapers at a few pence per quart, and I have known another to throw them out among the gravel of his walks. As far as my own experience goes from collecting them myself at Portstewart and Ballintoy, I look on them as most interesting objects. I believe they must have been in daily requisition, not only to scrape skins, but to take nutritive matter off the bones, marrow out of the inside of bones, bark from trees, and for many other purposes. And so we have them of different types—broad for scraping flat surfaces, hollow for scraping cylindrical surfaces like the outside of a bone or shaft of an arrow, while others have a narrow end for scraping such places as the hollows of bones.

I have made experiments with scrapers, and find them more effectual for scraping purposes than if the sharp undressed edge of a flake were used. Previous to the meeting of the British Association in Belfast, I procured the skin of a kid which had been cured by strewing on the fleshy side a mixture of powdered alum and salt, which was allowed to remain for about two or three weeks, when the skin was washed and hung up to dry. It was dried when I got it, but so stiff and crumpled that no garment could have been made from it. I then scraped the one half of the skin on the fleshy side for a considerable time, leaving the other portion in its natural state, and I found that the scraping had the effect of making it quite soft and pliable. The contrast between the scraped and unscraped portion was most striking.

I do not believe that scrapers were used for striking a light. They are too perfectly finished for that, and a certain design is apparent which would not be necessary in a strike-a-light. Besides, I do not believe that in a damp climate like the north of Ireland, where tinder, I should think, would be a scarce article, people would allow themselves to be dependent for fire on strike-a-lights. A fire might go out in one dwelling, but not likely in all, and it is more probable, I think, that a person who was so unfortunate as to allow his fire to go out, would apply to a neighbour for a light, than try the tedious operation of lighting it with two pieces of flint, or flint and iron pyrites.

Arrow-heads were found only at Portstewart and Castlerock. I stated in the paper which I read at Belfast, that the arrow-heads formed fully two per cent. of the whole flint objects I had then obtained. They still bear fully that proportion when we estimate what was obtained at Portstewart and Castlerock, but Ballintoy, which is so rich in other flint objects, has yielded no arrow-heads. The arrow-heads are of various types and finely finished, and it is probable that the number found gives no indication of the extent to which these implements were produced. Being used in the chase, they would be scattered abroad and lost, to be found afterwards at places far removed from the ancient dwelling-places. I have, however, been told by persons in the neighbourhood of Portstewart, that in cutting through a rock to make a piece of new road near the sand-hills, the road-maker came on a heap of arrow-heads lying in a hollow of the rock, which the person who described the circumstance to me estimated at a bushel, but I was not able to trace this discovery any further. The first arrow-head found, and which gave rise to my subsequent labours, was a variety of the leaf-shape with the point at the broad end, but others are kite-shaped, indented and barbed—the barbed being the most numerous. There is one of the kind referred to by Captain Cameron at the Glasgow meeting of the British Association, which he said resembled a type made of iron by the natives of Africa, for the purpose of rotating. The specimen I refer to is lanceolate and twisted. There are also several half-finished arrow-heads, and a kind of implement which I have always described as a knife, and still believe it to be such, but which is described by others as an arrow-head. There is generally a thick back, a sharp cutting edge, and a tang on such implements. My belief in their being knives, and not arrow-heads, arises from the point being in some instances either hooked or blunted.

There are many wedge-shaped pieces of flint with blunted faces and stout backs which were probably used in the manufacture of scrapers and arrow-heads. By pressing with such implements alternately on different sides of a flake at the same spot, I have been able to make an indenture similar to that between the barb and stem of an arrow-head.

The choppers or wedge-shaped pieces of flint, so large that the hand can grasp them firmly, are most numerous at Ballintoy, but I have found them also at Portstewart and Castlerock. I have also excavated some at Ballintoy of triangular outline, with thick base and cutting point, like the palæolithic implements from the river gravels. These chopper-like implements I believe to have been used in cutting wood for the fire and other operations requiring a stout implement. I will just

remark that, in looking over a number of palæolithic implements and trying them in the hand, I find they are so formed that you can strike with either edge as well as the point, and some are so constructed that the thick basal portion extends some distance round one of the angles of the base, and, strictly speaking, leaves only one cutting edge. Such palæolithic implements would appear to me to have been used in a similar manner to those choppers and probably for a like purpose. Several hatchets of the Danish kitchen midden types have also been found, and a gradual merging of both scraper and chopper into the hatchet type is frequently visible.

Cores are plentiful and some are very small. One could hardly believe that flakes struck from the smallest cores would be of the slightest use. The hammers which were used for striking the flakes from the cores are also very numerous and of various sizes. They are chiefly made from waterworn quartzite stones. The ends are always bruised and flattened by the process of hammering.

As regards the material from which flakes were struck I believe that the flint stones found on the sea-shore were chiefly used, but I have met with flakes of obsidian at Portstewart having bulbs of percussion, and I have lately got an arrow-head of that material. I found several lumps of porous lava of the nature of pumice which have been rounded by rolling on the sea-shore. This material and also the obsidian may be natural productions, as pitch-stone is found in several places in county Antrim, but I think it just as likely that the pumice, which I find floats on the water, may have floated from a distance having the obsidian attached to it, just as seeds from the West Indies and other objects are cast ashore at Portstewart at the present time. I have found no evidence as yet that mining has been resorted to for the purpose of obtaining flint, yet it seems improbable that such loose boulders of flint as could be picked up would yield sufficient material for the manufacture of all the flint implements that have been found in Ireland.

Of the stones known as oval tool stones, four have been found. The age of these objects is considered doubtful both by Sir John Lubbock and Dr. Evans. Those found by me were associated with flint scrapers and other objects such as I have described; but considering the amount of denudation that must have taken place before they could be left exposed on the surface, it is quite possible that the objects in the dark layers might get mingled with others of later date which had been deposited higher up, and so if there was any difficulty in believing that the tool stones were of the same age as the flint objects, it could easily be explained; but lately when excavating at Ballintoy, I found,

firmly imbedded in the dark layer and closely associated with scrapers, flakes and the usual broken and split bones, the half of one of those tool stones which had got broken. I therefore think we have sufficient evidence that the tool stones and flint implements are of the same age. The very fact, too, that such oval tool stones as are formed of quartzite have their ends bruised from hammering, like the hammer-stones found with the flints, would, I think, be additional evidence in favour of that view. But Dr. Evans, in his presidential address to this Society in January last says, that if the tool stones and scrapers were found to be contemporaneous, he should more readily accept the scrapers as belonging to the age of iron, than the tool stones as belonging to the age of stone. In deference to such weighty authority, I will admit that the scrapers and other flint implements found at Ballintoy may be of younger age than flint implements found elsewhere, but as far as I have seen not a trace of metal of any kind has been found, and there is no evidence to show that they are of the age of iron or even of the age of bronze. That the people were manufacturers of stone implements is sufficiently shown by their flint cores, flakes, hammer-stones, and scrapers. There is also no doubt that the scrapers and tool stones were contemporaneous, and although stones of the latter kind may have belonged to the early Iron Age in Denmark, I believe they belonged to the Stone Age in Ireland.

I have found other stones indented slightly on the sides as if they were tool stones in an early stage of manufacture, but I believe such stones to have been used as a rest or sort of anvil in the manufacture of arrow-heads and scrapers. If the flake to be operated on were laid flat on the stone and held down with the thumb, and the edge pressed by one of the wedge-shaped implements I have described, the latter would strike against the stone every time a flake was removed, and soon produce a depression. I have also got some bored stones, and I observe that similar depressions appear to have been produced before commencing to bore. The boring, I believe, has been produced by a rotating piece of wood and sharp sand. In one which I obtained from the dark-coloured layer at Ballintoy, there is an irregular ring-like marking inside the hole which would not be produced by a metal borer. The irregularities could be produced by the wabbling of the shaft of wood, and also by the end getting broader from wear, when a wide portion of the hole would be formed, but when the end of the drilling stick was dressed, it would make a narrow bore for a short time.

In examining a number of bored stones lately I have observed some very good examples of the kind of boring described, but

in the majority of instances, the finish that had afterwards been given to the holes obliterated these marks.

I have got bone implements both at Portstewart and Ballintoy. At the Belfast meeting of the British Association I exhibited an implement got at Portstewart with two prongs forming a kind of fork. It is about 8 inches long, and formed from the leg-bone of an ox or horse. It is similar in shape to a tool formed of wood, and sometimes partly of iron, which is used by persons for putting straw roofs on houses. Each tuft of straw is caught between the prongs and pushed well in so that it may not be carried away by the wind. This implement is called a "spurtle" in Ireland, and I imagine that the bone implement may also have been a "spurtle," and used in the thatching of huts. It would do equally well, however, for grubbing the soil or spearing fish. I procured at the same place several other manufactured bones, and others sawn, scraped, and cut.

At Ballintoy I obtained several bored and cut bones, bone-pins and needles. A short time ago I got from the black layer a bone-borer and a needle with a neatly formed eye. I also had the large end of the antler of a deer from a different part of the same layer having a hole bored through, wide at the surface of the bone on both sides, and narrow in the middle like the holes in many stone-hammers.

The pottery is similar in character and ornamentation to burial urns; it is found in fragments, and abundantly in the black layer, and is therefore of the same age as the scrapers. I believe from finding lumps of clay in the black layer suitable for pottery that it was manufactured on the spot and has been used for domestic purposes.

Small beads of serpentine have been found at Portstewart, but only in one spot; I believe they are of the same age as the flint implements, but as yet they have only been found on the surface. Small flat circular pebbles are frequently found, some of them formed of ornamental stone. There is no evidence that they have received any workmanship, but from finding a little cluster of about 20 in number while excavating at Portstewart, I think it is possible they may have been covered with soft skin and used as buttons.

The animal remains found on the surface associated with the flint objects have been examined by Professor A. Leeth Adams, F.R.S., and found to contain bones of man, ox, horse, hog, wolf or dog, fox and deer; and during the past year I have obtained remains of the same kind of animals from the dark-coloured layer mixed up with the scrapers and other implements.

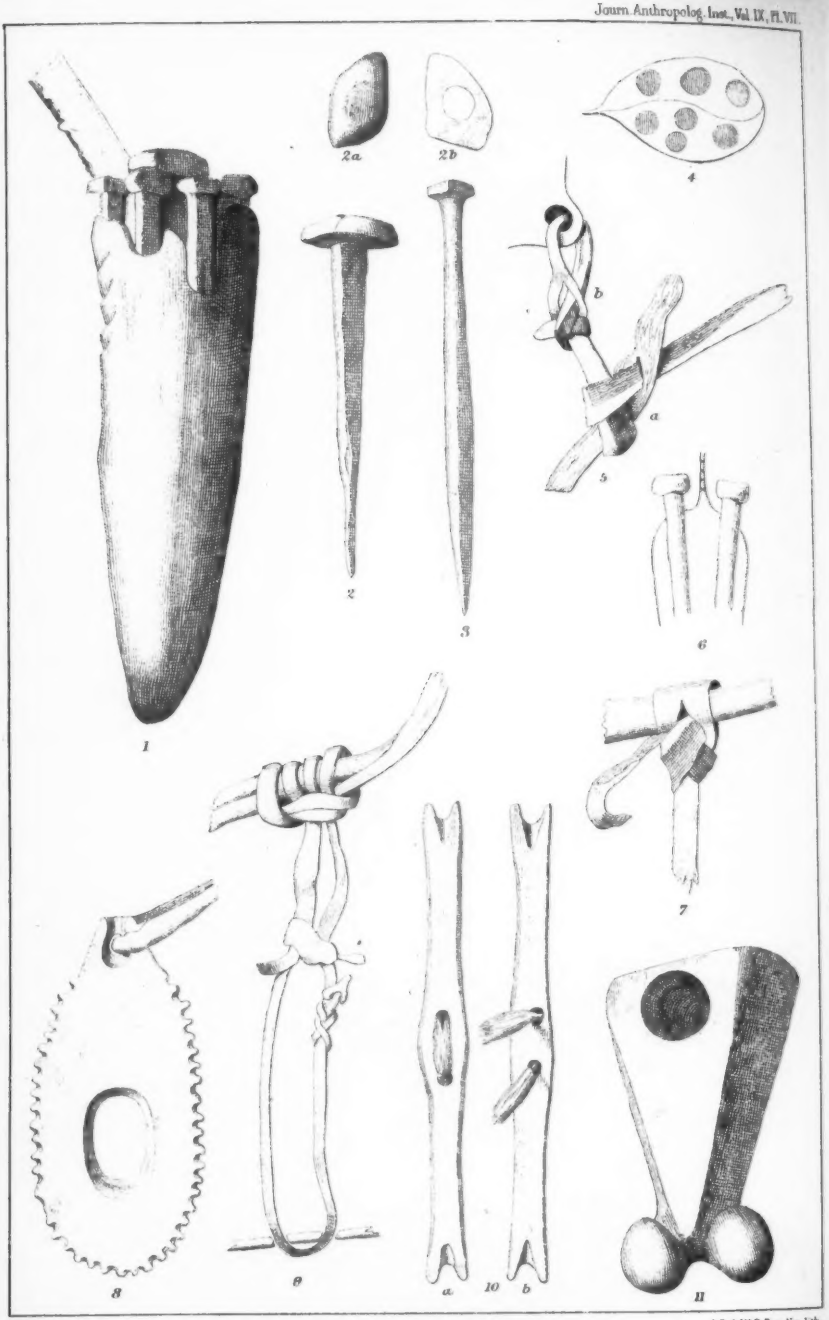
The shells are chiefly those of Littorina and Patella, but I have found Ostrea, Mytilus, Cyprina and Pectunculus. I have

frequently in digging met with little heaps of the Patella, about a bushel in quantity, but in many parts of the black layer the shells are very thinly scattered. I have found no shell-mounds like kitchen middens, but the black layer covers a considerable district. It is from 3 or 4 to 12 inches in thickness, and no remains are found either above or below it. There is, however, frequently more than one layer. It has been coloured by the burning of wood and bones and probably by absorbing refuse animal matter. Charcoal and burned bones are regularly met with in the layer. It is quite firm and resists denudation long after the covering of sand is removed.

All the flakes, scrapers, and other flint objects found on the surface have a beautiful porcellaneous glaze, while those excavated from the dark layer show a dull unglazed surface. The bones found on the surface are also more or less glazed and much firmer and tougher than those freshly excavated. I believe they regain firmness and strength to a certain extent when left exposed for a short time on the sand. The flakes found at Portstewart are as a general rule smaller and finer than those found at Ballintoy. At the latter place they are broad and flat, and a flake having a central ridge down the back is scarcely to be met with. In reading Dr. Evans's description of palæolithic flakes in "Stone Implements and Ornaments of Great Britain," it struck me very much to see how closely the description would have applied to those from Ballintoy. I do not on this account claim for the flakes and implements found there any extraordinary antiquity, but I believe, notwithstanding the oval tool-stones being found among them, we must refer them to the Stone Age.

Discussion.

Colonel Godwin-Austen observed: Mr. Knowles has supposed that the workers of these flint implements did not use flint as a means of obtaining fire owing to the dampness of the climate. My experience goes to show that such is not the case in the dampest climate perhaps in the world, the Khasi Hills; there the people always use the flint and steel for obtaining a light, the tinder carried about the person being quite dry enough.



W.J.S. del.

J.P. & W.R. Ernalie, lith.

ESKIMO BONE IMPLEMENTS.

On some Eskimos' Bone Implements *from the* East Coast of Greenland. By W. J. Sollas, M.A., F.G.S., Assoc. Roy. Sch. Mines, London.*

On finding amongst the numerous Eskimo implements which are preserved in the Bristol Museum a few which do not appear to have been previously described, it occurred to me that it might be worth while to publish a short account of them, more especially as every trifle relating to the Eskimos has become a matter of importance since the publication of Professor Boyd Dawkins' speculations on the probable blood relationship between these people and the palæolithic inhabitants of Europe.

The object at present under our notice is a leathern armlet (fig. 1) with some hunting or fishing implements suspended to it, which was presented to the Museum by Mr. Rowden, R.N., who brought it home in H.M.S. "Griper," from Clavering and Sabine's voyage. It came originally from the bay of Gale Hamke, on the East Coast of Greenland, where it was evidently both worn and used by its original owner, smears of dried blood still encrusting every part of it.

The leathern bracelet itself consists of a thin strip of pre-

pared skin, about one-seventh of an inch square, 15 inches long, and joined at the ends into a ring about a foot in circumference,

* Read June 24th, 1879.

so that it just fits over the outside of my coat-sleeve. The joining of the ends (Pl. VII, fig. 5 *a*) has been accomplished by making a longitudinal slit just about half an inch from the extremity of one end, the other end has then been drawn through this for about 2½ inches of its length, and afterwards tied in an ordinary knot round the slit end at the commencement of the slit. The ring so formed shows two tag ends; one short and thick, remains free; the other, 2 inches long, thin and tapering, is utilised as a suspensor for an elliptical bone disc, one of the implements attached to the armlet; for this purpose it is passed through an eyelet hole in the disc, bent upon itself into a loop, passed through a slit near its origin and tied about itself in a knot, thus repeating the method of tying by which the ends of the bracelet were joined together (Pl. VII, fig. 5 *b*). The mode of attachment of the other implements, which consist of a case full of bone pins, and two instruments of a somewhat problematical character, will be described in the account given of these implements below.

The Bone Pins (Pl. VII, figs. 2 and 3).—These are each carved out of a single piece of bone or ivory, and in general appearance closely resemble, as Parry has remarked, tenpenny nails. The shaft is straight, square, or oblong in section, 1·95 to 2·7 inches long, 0·15″ broad near the head, and of the same thickness for the greater part of its length, but afterwards rapidly tapering to a sharp pyramidal point; the pointed end is usually cleanly cut, a pyramid, with four acute isosceles triangles for its sides, but in one instance (fig. 2) it is clumsily shaped so as to resemble the badly sharpened end of a lead pencil. In one of the pins (fig. 3) the shaft is cylindrical near the head, and afterwards triangular in section, with a three instead of a four-sided pyramidal point. The square flat head is set on well at right angles to the shaft, its upper edges are more or less rounded off (fig. 2 *a*), but the lower ones are sharp and rectangular (fig. 2 *b*). It varies from 0·25″ to 0·5″ in breadth and 0·075″ to 0·2″ in thickness. In one case the head projects on two opposite sides of the shaft only, being cut off flush with the other pair of sides, making the resemblance to a tenpenny nail very marked.

There are seven of these pins, and they are fitted into a leathern case (Pl. VII, fig. 1). Six longer ones forming an outer circle, in the middle of which is placed the seventh, shorter and with a considerably larger head than the rest, and so serving to keep the others from slipping out. The case is in the form of a blunt compressed cone, 2·75 inches long and 0·9 inches along the major axis of the elliptical upper end. Its construction is simple and ingenious. A piece of dressed skin, cut in the form of a segment of a circle, has been folded into a cone, and the lateral opposed edges sewn, herring-bone fashion, together; the

upper edges have likewise been brought together and sewn through, so producing a completely closed conical bag. The upper surface has then been perforated on each side of its mesial seam, with an opening for each of the pins (Pl. VII, figs. 4 and 6). Finally, the bag seems to have been allowed to dry and so to have acquired the stiffness it now possesses. In cutting the skin into the proper form for the case, a long strip was left prolonging the upper end of one of the lateral edges; this strip has been folded double for half an inch past its origin and sewn together, to diminish its breadth and increase its thickness; for the rest of its length it is single, narrow, and thin. Where it begins to be of single thickness it is looped round the leathern armlet, and tied by first passing the free end through a slit in itself, and then knotting it; it is thus secured to the armlet (Pl. VII, fig. 7) in the same way as the ends of the latter are joined together.

The occurrence of the bone pins on a strap which is evidently part of a hunter's or fisherman's equipment, and their blood-smeared appearance make it improbable that they were used as fasteners for the dress, though had they been found dispersed in the middle of a cave breccia, this is the use which would most probably have been attributed to them. They are not pins in the domestic sense of the word; indeed, I have not been able to find in accounts of the Eskimos any mention of dress-fasteners having the form of pins. These people make a good use of the needle and thread, and well understand the use of buttons, but pins they do not appear to regard as an article of the toilet, for which indeed in the case of skin-garments they would be ill suited. Their use, I think, will be gathered from the following passage, which occurs in Parry's Account of his Second Voyage, p. 510:—"As the blood of the animals which they kill is all used as food of the most luxurious kind, they are careful to avoid losing any portion of it; for this purpose they carry with them a little instrument of ivory, called toŏ-pōo-tă, in form and size exactly resembling a twenty-penny nail (fig. 25) with which they stop up the orifice made by the spear, by thrusting it through the skin by the sides of the wound, and securing it with a twist."

The figure which accompanies this account is almost exactly similar to those figured on Pl. VII, only differing by the presence of a perforation through the shaft just below the head, for the passage of a string, by which it is attached to the hunting bracelet; as our pins are carried in a quiver, this perforation is obviously not needed by them. The idea of carrying a number of pins together in a case appears to be a distinct advance on that of perforating each one, and suspending it separately. It is interesting, however, to find that both kinds of

pins, perforated and not perforated, are in use amongst the Eskimos.

Parry's statement as to the use of these pins is confirmed by a similar passage in Lyon's narrative, and by the following from Crantz:—"When they have caught a seal, they stop the wound up directly, that the blood may be kept in till it can afterwards be rolled up in balls, like forcemeat, to make soup of," and again: "Then he runs the little lance into it, and kills it outright, but stops up the wound directly to preserve the blood."* This then is the use to which our bone pins were put—they are little skewers or toŏ-pōo-tăs: and thus another possible use besides that of dress-fasteners and awls is suggested for the bone pins which have been found associated with palæolithic implements in this and other countries. The bone pin, for instance, found in Kent's hole, 4 feet down in the cave earth below the stalagmite of the vestibule, may possibly be a toŏ-pōo-tă, though it is rather a large one for the kind, attaining a length of $3\frac{1}{2}$ inches; it is also circular instead of square in section, with a screw-like head, and is altogether of more clumsy make than our forms. It is said to be highly polished as if by constant wear, though for the matter of that so too are some of our toŏ-pōo-tăs; how far the differences between the recent and the fossil pins are related to differences in function is a difficult question to decide, and the latter may after all have been used for dress-fasteners, as Dr. Evans suggests; there is, indeed, a fourth kind of use to which they may have been put, viz.: as nails. Thus Crantz, in writing of the construction of an *umiak* or "woman's boot," says:—†"The beams, posts, and benches are not fastened with iron nails, which might easily rust and fret holes in the skin, but with wooden pins and whalebone bands." He does not mention bone pins here, it is true, but in a country where bone is so frequently substituted for wood, it is very likely that the wooden pins alluded to may sometimes be replaced by bone ones. That bone nails are used in some cases is shown by the following sentence: "The walls" *i.e.*, of the summer residence, "are hung inside with old worn tents and boot skins, fastened with nails made of the ribs of seals." Unfortunately these nails are nowhere further described. While quoting from Crantz, one may add the following passage:—‡ "All the tools he uses for this" (*i.e.*, the construction of an *umiak*) "and all other work are a little lock-saw, *a chisel, which when fastened on a wooden haft serves him for a hatchet*, a little gimlet, and a sharp-pointed pocket knife." From this it would appear that we may add a third instance to the

* "The History of Greenland." By David Crantz, i, 143. (1767.)
† Crantz, p. 149.
‡ Crantz, p. 139.

two mentioned by Dr. Evans,* in which a celt may serve either as an axe or as a chisel. To return after this short digression to our bone pins. Another pin from palæolithic caves which appears to be referable to the "toŏ-pōo-tă" is that figured by M. Lartet ("Ann. des Sci. Nat.," 4 ser. vol. xvi. Pl. II, fig. 2). It is of the same size as our pins, and though it is clumsier in form, that is quite in keeping with the character of most of the palæolithic implements when compared with those of the modern Eskimos.

The resemblance of the bone implements of Scandinavia to those of the Eskimos is a very remarkable thing when we consider that the former are referred to the neolithic age; and taken in conjunction with the occurrence of many other antiquities of an Eskimo character in Scandinavia, might lead us to infer that some of the people of that country during neolithic times were quite as much Eskimos as the palæolithic people of other parts of Europe; at any rate, it makes it quite possible that the perforated bone pins figured by Nilsson (figs. 263–265, Pl. XVI) may have been used in the same way as the perforated toŏ-pōo-tăs described by Parry, though there is a difference in form, the Swedish pins being cylindrical with circular heads; their points too, are very blunt, even to the extent of being quite rounded off. It is impossible to say, however, whether the bone pins found in Barrows in this country were used for toŏ-pōo-tă purposes—the one from Green Lowe Barrow, 4 inches long (figured in the "Crania Britannica," vol. ii. Pl. XLI), is certainly very like a toŏ-pōo-tă; that from Monsal Dale, 6 inches long, and with a perforated head, much less so.

The next instrument which calls for attention is a heavy and massive piece of workmanship (Pl. VII, fig. 11). It is a solid pyramidal piece of bone or ivory, 1·75″ high, with a rectangular base 1″ long by 0·6″ broad, the basal edges are sharp, the lateral edges rounded off. The blunt apex of the pyramid gives off two lateral processes or nearly spherical protuberances, one from the end of each of its narrow sides; their distance apart is just 0·9 of an inch. The broad or basal end of the bone is completely perforated by a wide cylindrical canal, 0·35″ in diameter. The general form of the implement reminds one of a massive old-fashioned seal. It might very possibly have been used as a sinker for a fishing line, which would accord well with the fact that unlike the other implements it is not securely knotted on to the leather armlet, as if never intended to be taken off, but merely fastened loosely by a thin thread of whalebone, which passes through the wide basal perforation and is loosely knotted at

* Evans's "Ancient Stone Implements," p. 153.

each end on to the armlet. It was thus readily removable, while the other tools could only be untied from the armlet by the exercise of much patience and ingenuity. If suspended by a cord passed through the hole in it, the pyramid hangs apex downwards, and is then in the right position for use with a fishing line attached to its narrow end. Nothing could be easier than putting on such a line by running a slip-knot over the projecting knobs, unless it were the taking it off again, and on adapting a slip-knot to it myself I find that the string, of necessity, lies exactly in the grooves which have been cut around the projecting knobs, as if on purpose to receive it. As regards the perforation in the bone it is noticeable that its edges towards the apical end have been left sharp, as when the hole was bored, while the opposite edges, which would otherwise fret a line passing over them, have been well rounded off, as is shown by the following vertical section.

The dotted line shows the position the inserted cord would take. I do not know whether any similar implements have been found in the fossil state; one would expect to meet with them if they were at all used by any of the extinct races of Europe, for they are too massive to easily decay, and too large to be easily passed over by a careful collector.

If the foregoing instrument was used for sinking and suspending fish-hooks, the next (Pl. VII, fig. 10) appears to have been intended for carrying them about. It is a narrow bar of bone, 2·55″ long and 0·1″ thick, a little broader in the middle, where it measures 0·15″ across, and at the ends, than between these parts. It is notched at each end as shown in the sketch, and the notches are prolonged into short shallow grooves. In the slightly broader middle part are two small holes, symmetrically placed in the middle line and 0·35″ apart. They serve for the passage of a thin leather string which suspends the bar, and is secured to the leather armlet by knots of a most puzzling kind.

The string passing through the ivory bar is thin and narrow, but it widens towards the end, and is spliced at the other on to a broader thong. The splicing is characteristic, the two ends to be joined are each slit longitudinally for about half an inch, one end is then passed through the slit in the other, the sides of this slit are now crossed over and the first end is passed through the slit again, under the crossing, the sides of the slit are again crossed and the end is once more passed through it, this time over the crossing. The end which has then been threaded through the other now goes through the reverse process, one of the distant free ends being threaded through it; the interlaced splice thus produced is very strong, and pulling upon it only makes it the firmer. The two remaining free ends are next joined together, so that the thong becomes a ring; the junction is accomplished, partly by interpenetration, and partly by an ordinary knot; and the sides of the ring having been doubled together, a slit in one of its joined ends serves to brace together its opposite sides and so to convert the ring into a mere double thread. It now only remains to attach this double thong to the leather armlet, and the knot by which this is accomplished will be best understood from the figure (Pl. VII. fig. 9); one looped end is folded over the armlet, the other is then first drawn through the loop, next passed under the armlet, then brought back over it in an opposite direction to the first fold, and finally drawn under the band which it formed on passing out of the looped end to encircle the armlet. This is the last of the knots that we have to describe, and we now pass to a consideration of the fourth and last implement of the armlet. This is the perforated disc (Pl. VII, fig. 8), the mode of attachment of which to one end of the armlet thong has already been described. It is oval in outline, flat on one side, very faintly convex on the other, 1·35″ long by 1″ broad, regularly notched at the edges for the sake of ornament, and perforated by two holes, one nearly central, more or less elliptical in outline, 0·45″ long, by 0·35″ broad, the other much smaller, situated in the slightly produced proximal end of the disc, and serving for the passage of the leather string by which the disc is suspended to the bracelet. This smaller perforation is grooved at its proximal end to prevent its wearing away the leather string. The instrument appears to be comparatively new, exhibiting few signs of prolonged wear; one of the teeth between two notches is broken out, the surface is smeared with dried blood, which also clogs up the notches, and the distal edges of the central hole are well polished as if by continued friction. The latter fact would seem to point to the use of the disc as a simple kind of pulley-block, and it might very well have been used to change the direction of the motion of a cord

or to moderate its velocity, and so to save the hands of the fisherman when playing a rather heavy fish.

Description of the Plate.

Fig. 1.—Quiver with its contained bone pins.
2.—Ivory pin, *a*, upper surface of its head; *b*, lower surface. This pin occupies the centre of the group in the quiver.
3.—Another form of tŏo-pōo-tă.
4.—Plan of upper surface of quiver, showing a hole for each pin, and the upper seam in the leather.
5.—*a*, knot joining the ends of the armlet together; *b*, knot at one end of the armlet leather, serving to attach the perforated disc (fig. 8).
6.—Vertical section of the top of the quiver, showing upper ridge of leather (the seam of fig. 4) and holes for the passage of the pins.
7.—Knot by which quiver is fastened to armlet.
8.—Perforated ivory disc.
9.—Mode of attachment of the ivory bar shown in fig. 10.
10.—Ivory bar with notched ends, *a*, outer surface ("outer," with respect to armlet); *b*, inner surface.
11.—Ivory pyramid or fish-hook sinker.

(*All natural size.*)

NOVEMBER 25TH, 1879.

HYDE CLARKE, Esq., *Vice-President, in the Chair.*

The minutes of the last meeting were read and confirmed.

The following presents were reported, and the thanks of the meeting were voted to the respective donors:—

FOR THE LIBRARY.

From the AUTHOR.—A Guide to Modelling in Clay and Wax. By Morton Edwards, Esq.
From the EDITOR.—The American Antiquarian. Vol. II, No. 1.

From the INSTITUTION.—Journal of the Royal Institution of Cornwall, No. 21.
From the EDITOR.—"Nature," Nos. 524 and 525.
From the EDITOR.—Journal of the Society of Arts, Nos. 1408-9.
From the COUNCIL.—27th Annual Report of the Council of the City of Manchester on the working of Public Free Libraries.
From the SOCIETY.—Journal of the Royal Geological Society of Ireland. Vol. XV, Part 2.
From the EDITOR.—Revue Scientifique, No. 20.
From the EDITOR.—Matériaux pour l'histoire de l'homme, Tom. X, 7e liv.
From Colonel HENRY CLINTON.—International Pronunciation Table on Card. Tableau Synoptique de Prononciation Internationale. On Spelling Reform. By A. V. W. Bikkers.
From the SOCIETY.—Proceedings of the Philosophical Society of Glasgow. Vol. XI, Part 2.

The Rev. DUNBAR HEATH exhibited some squeezes of "Hamath Inscriptions." An illustrated description of these will appear in the next number.

A. L. LEWIS, Esq., read a paper on "Ancient Arithmetical Progress, exemplified by Roman Numerals."

M. DE LA COMPERIE exhibited specimens of Mosso (Chinese) writing.

In the absence of the Author, the Director read the following paper.

The TURCOMANS *between the* CASPIAN *and* MERV.

By ARMINIUS VAMBÉRY, Professor Oriental Languages, University, Buda-Pesth.

WHILST men are every year becoming better acquainted with the orographic and hydrographic conditions of many hitherto entirely sealed portions of Central Asia, our knowledge of the inhabitants, of their languages, history, manners, and customs is still very deficient.

This remark especially applies to that fraction of the Turkish race known under the name of *Turcoman*, a word the etymological meaning of which has been so variously explained; but which nevertheless has the simple *signification* of the Turks *par excellence*. This people deservedly bears the title because, of all the multifarious divisions of the far-spread Turkish race, there are few that can bear comparison with them in purity of race

and language. I allude to the *Turcoman* tribes who have inhabited, from time immemorial, the western portion of the great Turanian desert. Notwithstanding that they are split up into several subdivisions, and that fierce enmity rages amongst themselves, they have never lost the purity of their race, like the *Kirghises*, *Karakalpaks*, and *Uzbegs* upon whom the great wars, and particularly the irruption of the *Mongols*, has wrought a wonderful change in blood, as well as in manners.

Whilst the *Uzbegs*, originally a political and not an ethnical name, chiefly consist of *Turks*, *Kirghises*, *Mongols*, and *Tartars*, who partly came from the Golden Horde, and partly had been long previously settled in the Khanates of Central Asia, the *Turcomans* are known as having remained comparatively pure and free from intermixture. Even those who took part in the wars of Timour and Nadir have generally returned to their clans in the desert.

It is owing to this circumstance that the physical features of the *Turcomans*, in spite of intermarriages with Persian female slaves, which are, however, not so frequent as is generally supposed, have retained a purer type of the genuine Turkish race than the rest of their brethren.

As a general rule the *Turcomans* are of middle height, like the *Kirghises*, and unlike *Uzbegs*, *Karakalpaks*, and *Osmanlis*, among whom tall men are of frequent occurrence. The forehead is less broad and flat, and the eyes less almond-shaped than is the case with those Turks who live in the north-east of Central Asia, and form the transition from the Mongol race to the Turkish. There is, however, with regard to the typical expression, considerable variation amongst the *Turcomans* themselves.

The *Goklans*, a fraction of the *Yomuts*, and the *Eresoris* may be taken as the most degenerate, whilst the *Tekkes*, and particularly the *Tchaudars* and *Imrailis*, bear the purest type of their nationality.

With regard to their early history, we find the *Salars* or *Saroks* first mentioned by the historians of the Arab invasion. This is a tribe now living to the south-east of Merv. Somewhat later the *Guz* or *Gozz* are mentioned as living in the environs of the present *Andkhoi*, where they caused much trouble to the *Samenides*, and became so powerful as to capture the Selajukian Prince Sanjar, whom they kept in prison for several years. Disregarding the erroneous transcription of Turkish words by Arab and Persian chroniclers, who from Tabari down to the latest writer have deformed almost every Turkish name, I cannot agree with those who discover in the aforesaid *Guz* or *Gozz*, the old Turkish mythical name of *Oghuz*. Such an absorption is contrary to the spirit of the Turkish languages. Only admitting

Guz to be the designation of clan, we may look upon it as the most eastern outpost of their nation, whose ancient home was that portion of the desert which stretches from the south-western shore of the Aral, along the east coast of the Caspian, down to the Görgen and Atrek.

Viewed in the light of comparative philology, the *Turcomans* stand nearest to the *Seljukians* of olden times, and consequently to the *Osmanlis* of to-day. This affinity is very striking, both as regards the grammar and the vocabulary. I will quote an example. The Ottoman writers of the twelfth, thirteenth, and fourteenth centuries used a dialect similar to the writings of Makhdumkuli, a Turcoman poet of the last century. An Anatolian peasant can converse with greater ease with a *Yomut* or *Goklan Turcoman* than with an *Azarbaijani Turk*, who is his near neighbour. Even common traditions affirm this relationship, for during my travels as an incognito Osmanli in the Turcoman steppe, the saying—"*Bir kardashimiz Ruma kitmish dir*"—"A brother of ours has gone to the west"—was constantly repeated to me. The philological argument, together with the scanty historical data, admit of the supposition that the *Seljukian Turks* who overthrew the *Samanides*, and who, after conquering Persia and Syria, founded the first Turkish principalities in Asia Minor, were in all probability a brother tribe to the *Turcomans* who remained in their ancient seat, only gradually encroaching partly in a south-eastern, partly in a south-western and southern direction into the country which they occupy to-day.

Thus we learn from historical records that the *Yomuts* already inhabited the banks of Görgen and Atrek in the fifteenth century, while a large fraction of them still remains in the south-western part of the Khanat of Khiva. The *Adaks*, *Tchaudars*, and *Imrailis* still occupy their old home between the Caspian Sea and Urgenj, as do the *Okuz* and *Khidr*, who are mentioned by Abulgazi, and by the historiographer of Shaibani. The *Ersaris*, quoted by the former as inhabitants of Khiva, are found to-day between Kerki and Charjui on the left bank of the Oxus.

The general characteristic of these nomads is their intense love for a wandering life, in which they surpass all their brethren of the steppes. While political revolutions and the influence of Buddhistic and Islamite culture have produced a change in the mode of living among the *Kazaks*, *Kara-Kirghis*, *Kipchaks*, and other Turkish tribes, we are unable to discover a like change among the *Turcomans*, excepting, perhaps in the isolated cases of the *Ersaris* on the left bank of the Oxus, and of a few *Yomut* clans to the south of Khiva.

As signs of this strictly conservative spirit among the *Turco-*

mans may be mentioned their laxity in the observations of the tenets of Mohammedanism, for although their conversion dates back as far as that of the settled inhabitants of the Khanates, religion has made but very little progress in the interior of the desert. The more we learn of their manners, customs, and daily life, the more are we astonished to discover so many remnants of the Shaman faith. There we find the adoration of the much dreaded spirits called *Oi-karasi*, the wailing ceremonies, and the sacrifices offered to souls of the departed.

At first sight, and to those unacquainted with their language and manners, the *Turcoman* will seem decidedly more savage than his nomadic brethren in the north and in the north-east. But this is a mistake, for under the rough exterior there are hidden many of the fine qualities of unsophisticated primitive life of the Turkish race.

A couplet or verse from the poems of the national bard, Makhdumkuli, or a favourite melody, can change the wildest fury into mildness, and the appeal "*Balang bashi uchun!*" ("For the head of thy child!") has saved more than one Persian prisoner from cruelty and death. Greediness for booty and ferocity are certainly not of rare occurrence, but considering that these tribes have led a camp-life for several centuries, we may easily find an explanation for these traits of character.

Our information respecting the past history of the *Turcomans* is vague and uncertain, but still thicker is the cloud which hinders us from obtaining anything like accurate statistical *data* respecting their total number. From Galkin down to Captain Napier this question has been frequently touched upon. In default of better information, I still adhere to the numbers given in my "Travels in Central Asia," which are adopted by Venyukoff and Rittich. Though I cannot vouch for the round number of one million of souls, I believe that later statistical information may *increase*, but will not diminish that number. Single tribes were formerly more numerous and powerful than they are now.

The *Salor* and *Sariks* must have been at the time of the Arab conquest much more numerous than at present. The same may be said of the *Karas* and *Alielis*, who enlisted in great numbers in the army of Chengiz. But at the present time the *Tekkes*, of whom there is, excepting Abulgayi's account, scarcely any mention in history, are the most numerous. Next to them come the combined *Yomuts* of Khiva and on the Görgen.

It may be assumed, as a general rule, that those *Turcomans* who by their position in the south-east part of the Hyrcanian desert come most in contact with the political movement on the highway from Turan to Iran, were the first to lose their

numerical strength. This was, in ancient times, the case with the *Salors*, *Sariks*, *Karas*, and *Okuz*, and this will also happen to the *Tekkes* who, unmolested hitherto under the shelter of Persian anarchy, will now have to undergo the hard trial of Russian supremacy, and will probably lose in the contest one fourth if not one third of their number.

In spite of their comparatively small numbers, the *Turcomans* have hitherto enjoyed the reputation of being fierce soldiers and dauntless adventurers. These qualities are partly to be attributed to the barren character of the steppes, and partly to the political condition of the neighbouring countries, which forced them into continual warfare to preserve their independence, which all nomads love, and for which the *Turcoman* is ever ready to sacrifice his life.

The sterility and nakedness of the Turcoman steppe are proverbial. We can hardly find any part of Central Asia which is more terrible, more void of the means of existence than the Kara-kum (black sand) desert, extending to Charjui, or than the Ust-yurt (upper home) stretching from the Kinderly Bay to Igdi. The Khalata sands on the right bank of the Oxus, the Batkak and Kizil-kum (swampy and red sands) are certainly not inferior as regards dreariness and horror. But they serve only as temporary places of abode to the *Kazaks*, whilst the *Turcomans*, constantly harassed by their neighbours, were more than once compelled to seek a refuge amidst a region cursed by nature, under a scorching sun, without a drop of drinkable water, and without a blade of grass for their cattle.

It may be said that the banks of the Görgen and Atrek, of the Chandir and Sumbar,* as well as of the Murgab and Tejen, are suitable for agriculture, and had nevertheless failed to attract the *Turcomans* to a peaceful life. In reply to such a remark, we would allude to the *Yomuts* in the south of Khiva, who, being less molested by inexorable tax-gatherers, have really adopted for some time past a half settled life. They till the soil, and bestow great care on their irrigation canals. They would become much more peaceful if the Khans of Khiva, moved by their empty exchequer, did not continually impose exactions on them. Similar and weightier reasons have compelled the *Yomuts*, the *Goklans*, and the *Tekkes* to rise in continual rebellion against the rulers of Tehran who, in their impotence to subdue these hardy nomads, have made devastating inroads which the haughty Persians are pleased to call "wars." These are repaid by Turcoman marauding parties, frequently in a more cruel and inhuman way.

* Sumbar is a contraction of Su-ambar *i.e.* "water reservoir."

I allude to the foraging and plundering parties, called *Alaman*, when men, women, and children are robbed and kidnapped, and whole districts of northern and eastern Khorasan are sometimes laid waste. This horrible and most detestable traffic in human flesh, of which I was an unhappy witness for months and months, makes me shudder even now, and will certainly not prompt me to exculpate the *Turcoman* robbers, as recent travellers have attempted to do, moved by political motives.

No! the *Turcomans*, who delight in the *Alamans*, are a most frightful set of men, and quite unworthy of our sympathy. But justice compels me to remark that the Persians would be less charitable and less humane if our European Legations in Tehran remained as indifferent spectators, and enabled the towns of Iran to offer such slave markets as Central Asian towns are, even now, in spite of the much vaunted Russian philanthropy.

Nomads of all times and all regions have been a plague to peaceable settlers in their vicinity; and this greediness, originating from the poverty of their own land, can only be restrained by power and good will: qualities in which the Central Asian and Iranian kings are sadly wanting.

But the moral and social conditions of men are always in strict conformity with natural and political exigencies. If, therefore, the *Kazaks*, who were man-stealers and robbers during the last century, now permit small caravans to pass unmolested over their deserts, and even single *tarantas*, I do not see why the *Turcomans* should not also be brought to a peaceful life. But their neighbours, and particularly Persia, must meet them honestly, and not with continual attacks upon their property and independence.

We must never forget that the *Turcoman* nomads, with all their reputation as cruel and ruthless plunderers, have many fine qualities in which they excel the neighbouring nomadic tribes, and especially the *Kazaks*, with whom they are frequently compared. Whilst the mental quickness of the latter commonly degenerates into cunning and fraud, the *Turcomans* are known, even among their enemies, for their truthfulness and the rigid observance of a plighted word—a virtue which is used to the disadvantage of the nomads by the deceitful Persians.

What struck me most during my sojourn among the *Turcomans* was their love and tenderness for their family and the respect they show to females. I found that women were not only quite on an equality with men as regards family rights, but that old matrons inherit the command over the clan, and enjoy the obedience of the rudest warriors. Their love of hospitality deserves equal praise. Their courage, and particu-

larly their ineradicable love of independence, will be a hard trial for the future conqueror. These qualities will tax the strength of Russia in subduing the roaming inhabitants of the Hyrcanian desert, in a manner which the northern Colossus has not experienced hitherto.

Apart from the great difficulties of the roads leading from the Caspian to Merv, of which Sir Henry Rawlinson has given us a good description in his learned paper—"The Road to Merv"—in the March number of the "Proceedings of the Royal Geographical Society," I would hazard the opinion that the *Turcomans* will not be so easy to deal with as the *Kazaks* and *Karakalpaks*, although even these required more than one century to be brought under the present rule, and were only amenable to Russian supremacy after prolonged and gradual advances into the desert, the erection of detached forts, and the free use of bribery.

The Russians had a tolerably good example of the power of resistance and the staunchness of the *Turcomans* in 1873, during their campaign against the *Yomuts;* and it must be borne in mind that these *Yomuts* are but semi-nomads, and not half as courageous and warlike as their brethren in the south. The *Tekkes*, whose country is the present goal of Russian desire, are not only the most numerous, but also the most valiant of all the *Turcomans*.

Putting, therefore, all political controversies aside, we may assume that the ultimate result of a costly and fatiguing march across the desert from the Atrek to Merv will not compensate the Russians for their losses and sacrifices. The *Tekkes*, knowing the fate that awaits them, will resist to the last. Driven from one point, they will emerge at another, harassing the invading enemy with all the means at their disposal.

Unless Russia has made up her mind to wage a war of extermination against the well-mounted horsemen who are the actual possessors of Merv, the expenses of the present and of any future campaign will be entirely thrown away.

Under such circumstances, the idea suggests itself whether it would not be better for both parties to make choice rather of a peaceful solution. The friendship and goodwill of the nomads might be secured by an agreement which would guarantee their independence of the powerful neighbour in the east and north, and secure them from the encroachments of the Persians. It is certainly a mistake to believe that the *Tekkes* or the *Yomuts* have no other means of subsistence than robbery and man-stealing. We must remark that this detestable occupation, though it suits the adventurous and rapacious character of the horsemen of the steppes, is far from being a common practice,

and its cessation will by no means make the continuous existence of the nomads in their native deserts impossible. The testimony of history supports our argument. If the *Turcomans* have been kept from inroads across the Persian frontier so often even in the present century, by the firm hands of a few capable governors of Khorasan, and if these inroads were of rare occurrence in several periods of history, they cannot be held to be necessary for the existence of the *Turcomans* at the present day.

Let the more civilised Powers try justice and humanity instead of conquests and wars of extermination, and the nomads will become more tractable and less apprehensive for their independence.

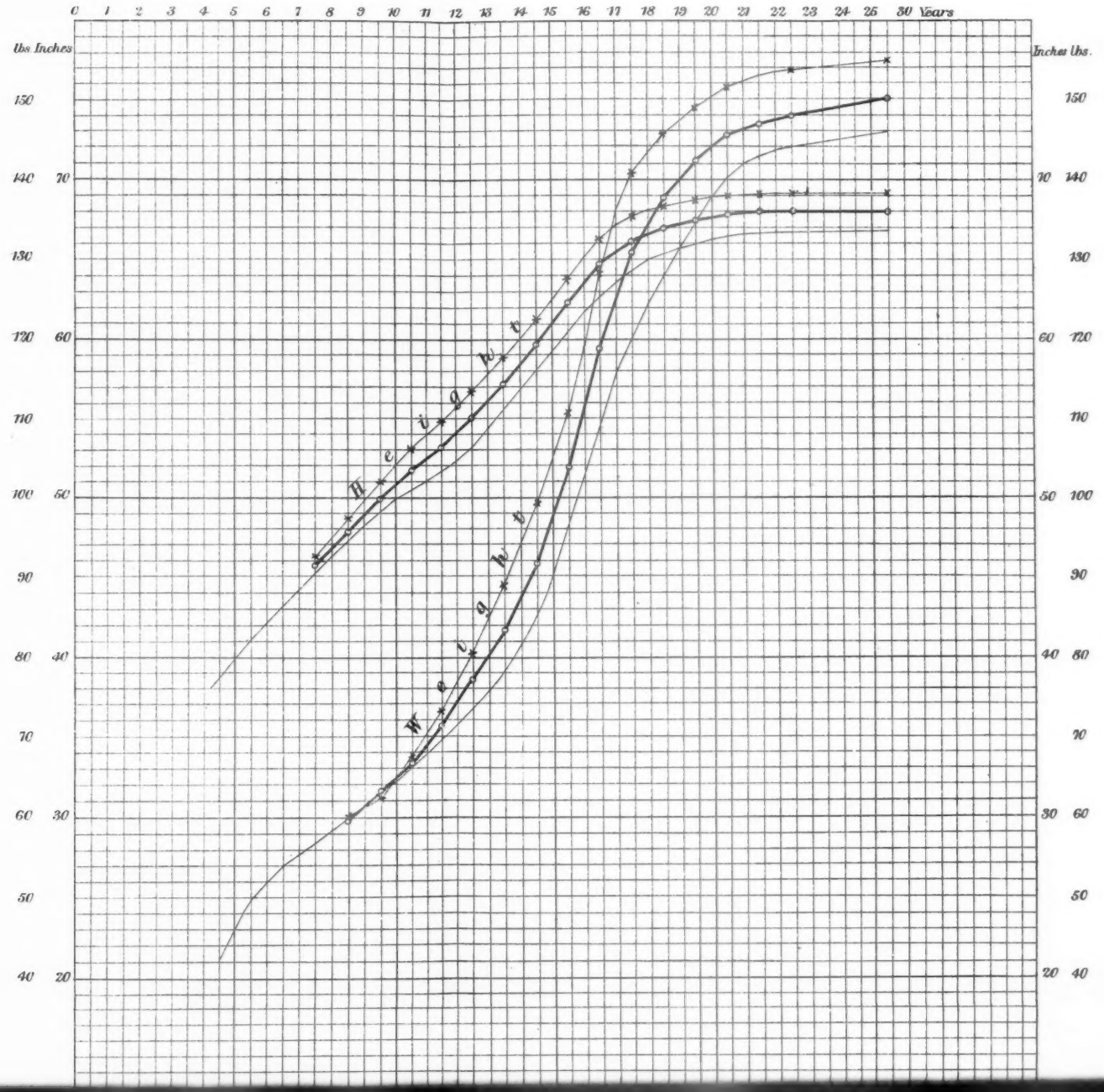
Discussion.

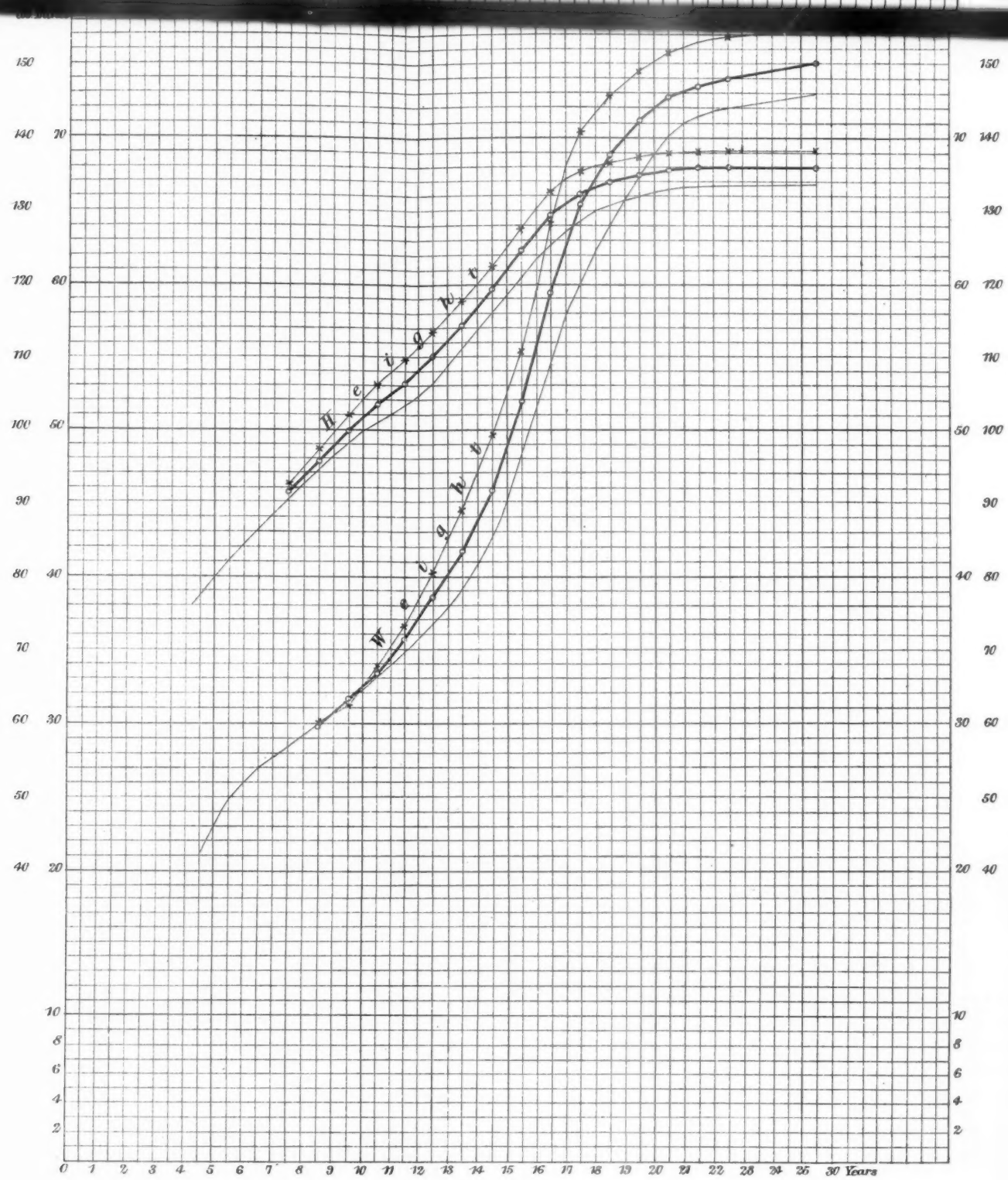
Mr. Keane said that the description given in the paper of the physical features of the Turcomans raised, without solving, a very important question. Professor Vambéry evidently regarded the Mongolian type as different from the Turks; yet both belonged undoubtedly to the same great Finno-Tataric linguistic family. It was not pretended that one race had borrowed its speech from the other, and there had certainly been no change of that sort within the historic period. Both had from time immemorial spoken the same or nearly allied tongues; yet they presented ethnically distinct types. Here therefore we seemed to have a very remarkable instance of the persistence of language with a profound modification of the physical characteristics. For if both started originally with one common mother tongue, it was obvious that they must have also originally belonged to one ethnical stock, and have subsequently become differentiated, while retaining the common speech. This was at variance with the generally accepted doctrine that physical traits were more persistent than language. He had not seen any theory offering an explanation of the difficulty, and regretted that the learned author was not present to throw some light on the subject.

Mr. Hyde Clarke remarked that the paper was written before the defeat of the Russians by the Tekke Turcomans, and was therefore prophetic as well as exact. Those in the room conversant with the population would be disposed to support Professor Vambéry's proposition as to the connection between the Seljuks of Asia Minor and the Osmanli. It was curious to note the resemblance to the Professor's description of the Yuruks and so-called Turcomans of Asia Minor who were commonly termed Kizillash by the orthodox. They were credited with the same superstitions. So far as he had observed, the women exercised much influence, and possessed great independence, although nominally subservient to the men.

I. DIAGRAM SHOWING THE HEIGHT AND WEIGHT OF THE ENGLISH POPULATION.

Professional Class — Average — Labouring and Artisan Class in Towns.





Height without shoes. Weight including clothes.

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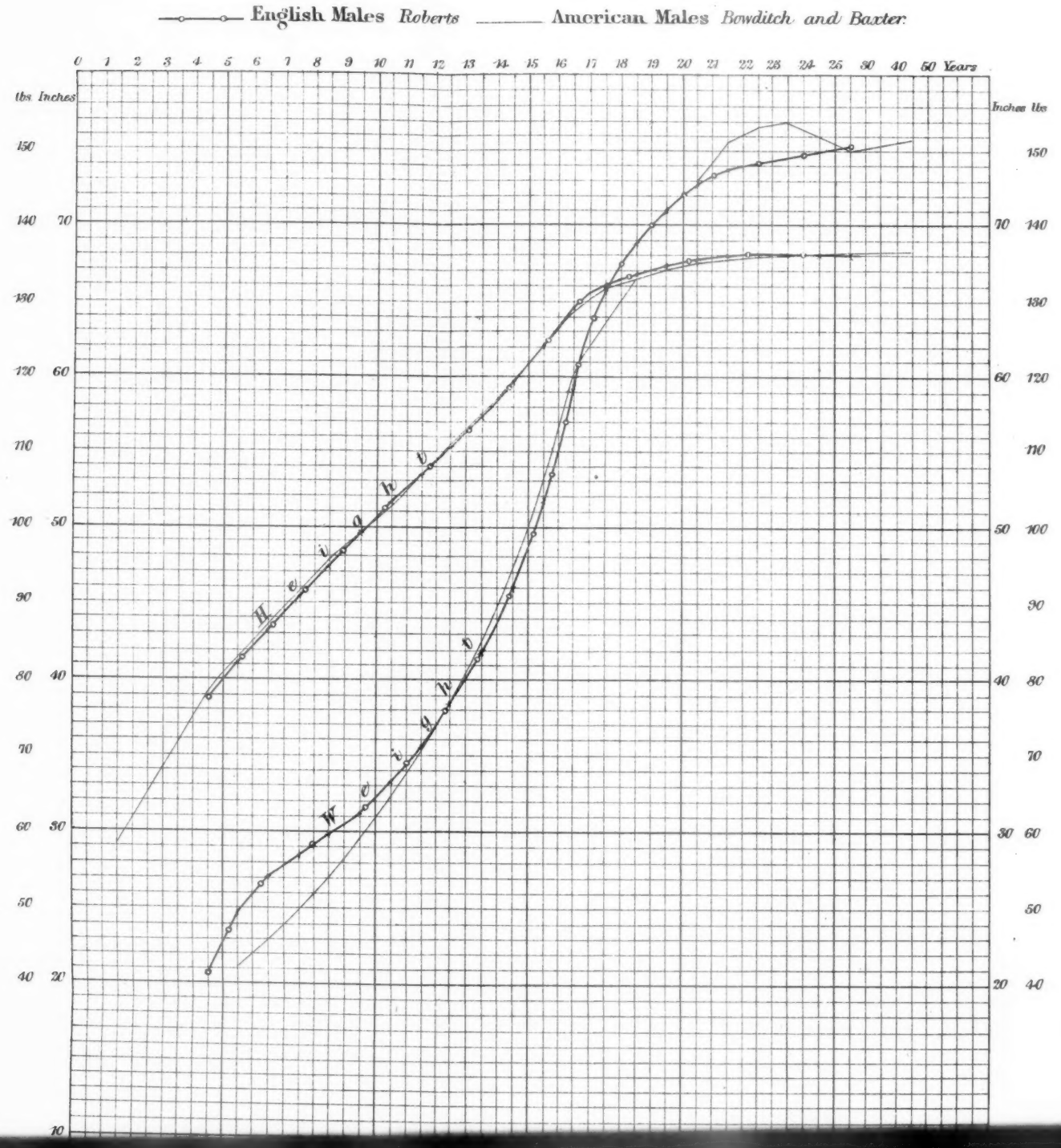
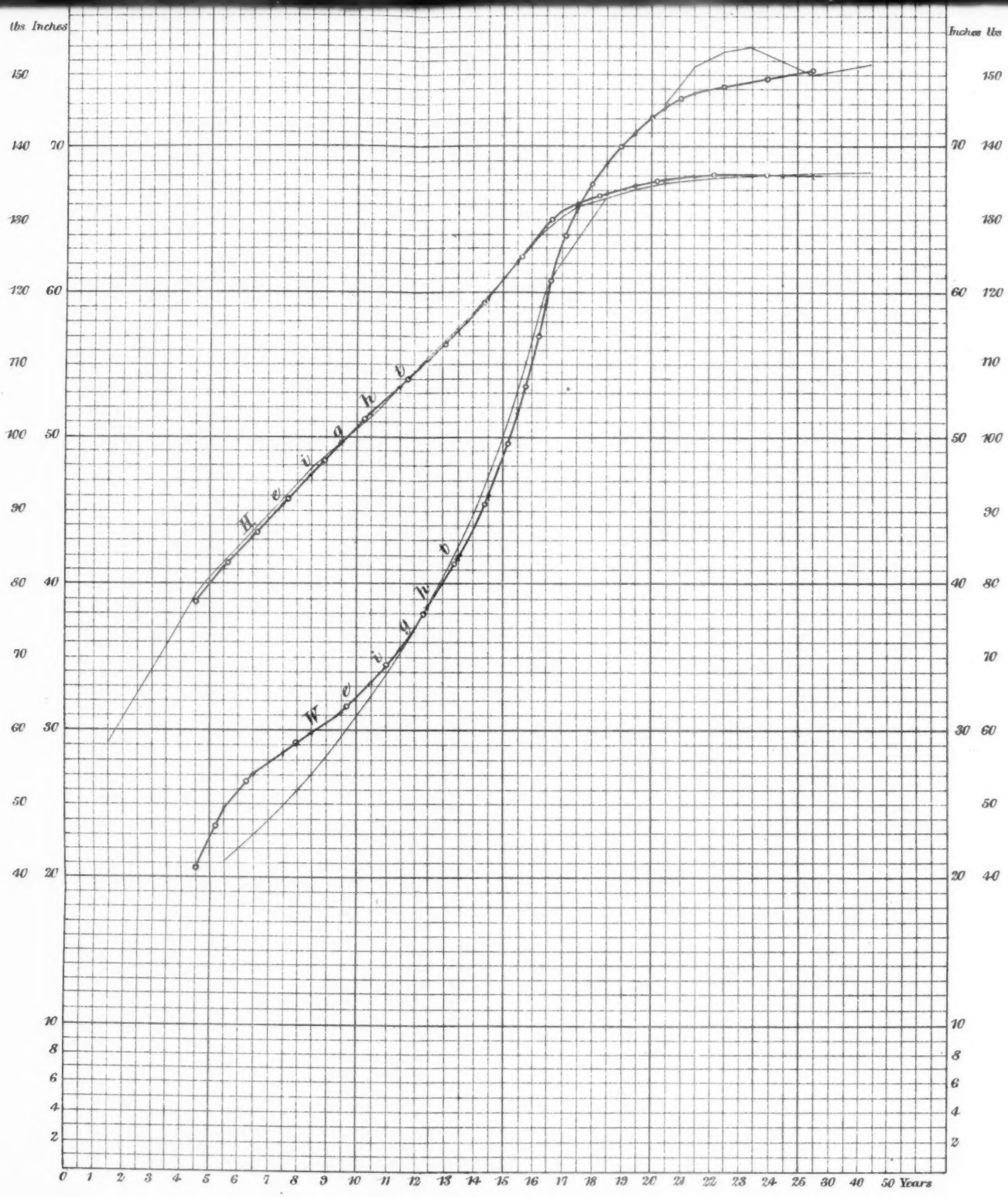
Illustrating the Report of the Anthropometric Committee.

2. DIAGRAM SHOWING THE HEIGHT AND WEIGHT OF ENGLISH AND AMERICAN POPULATION.





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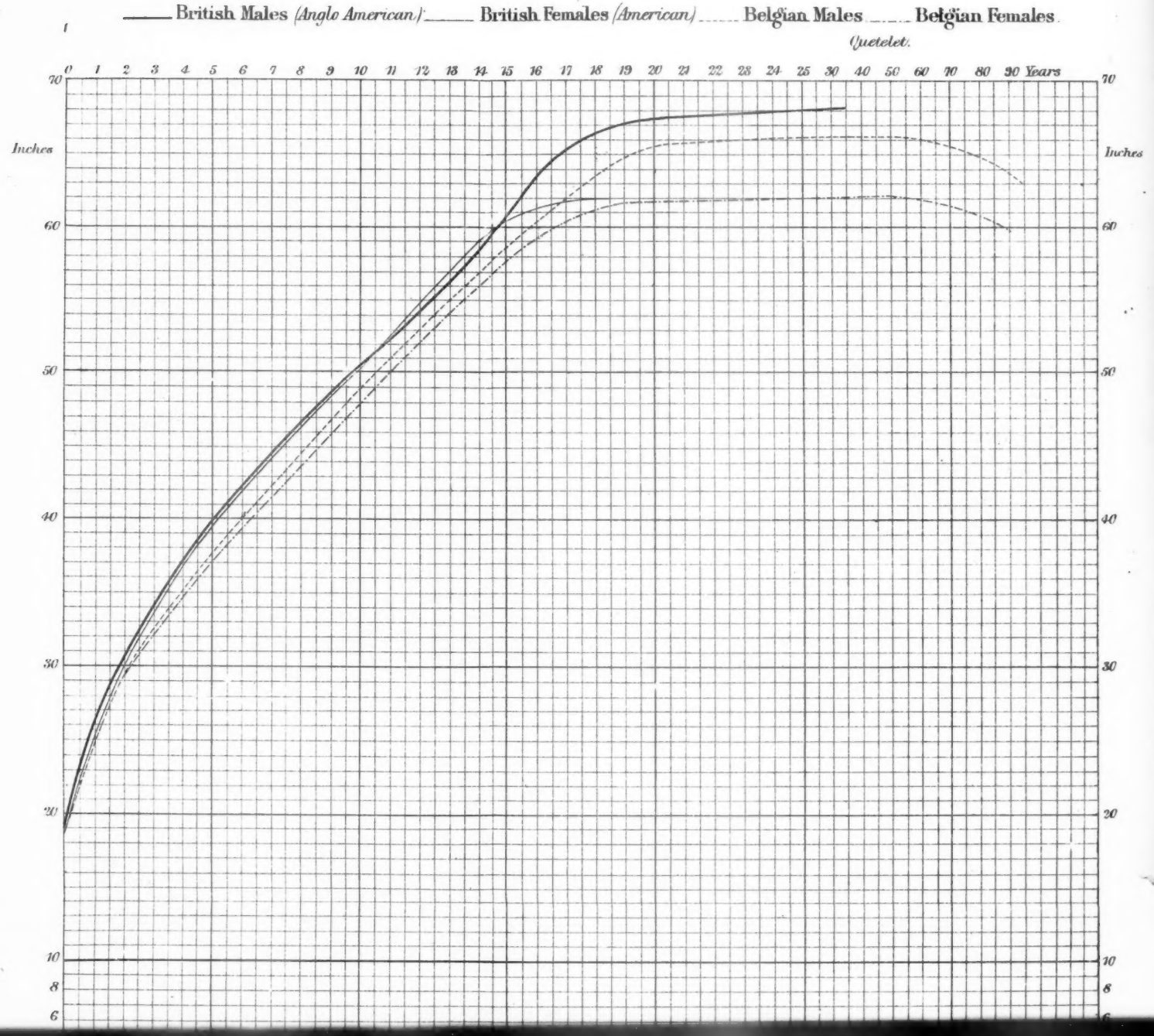
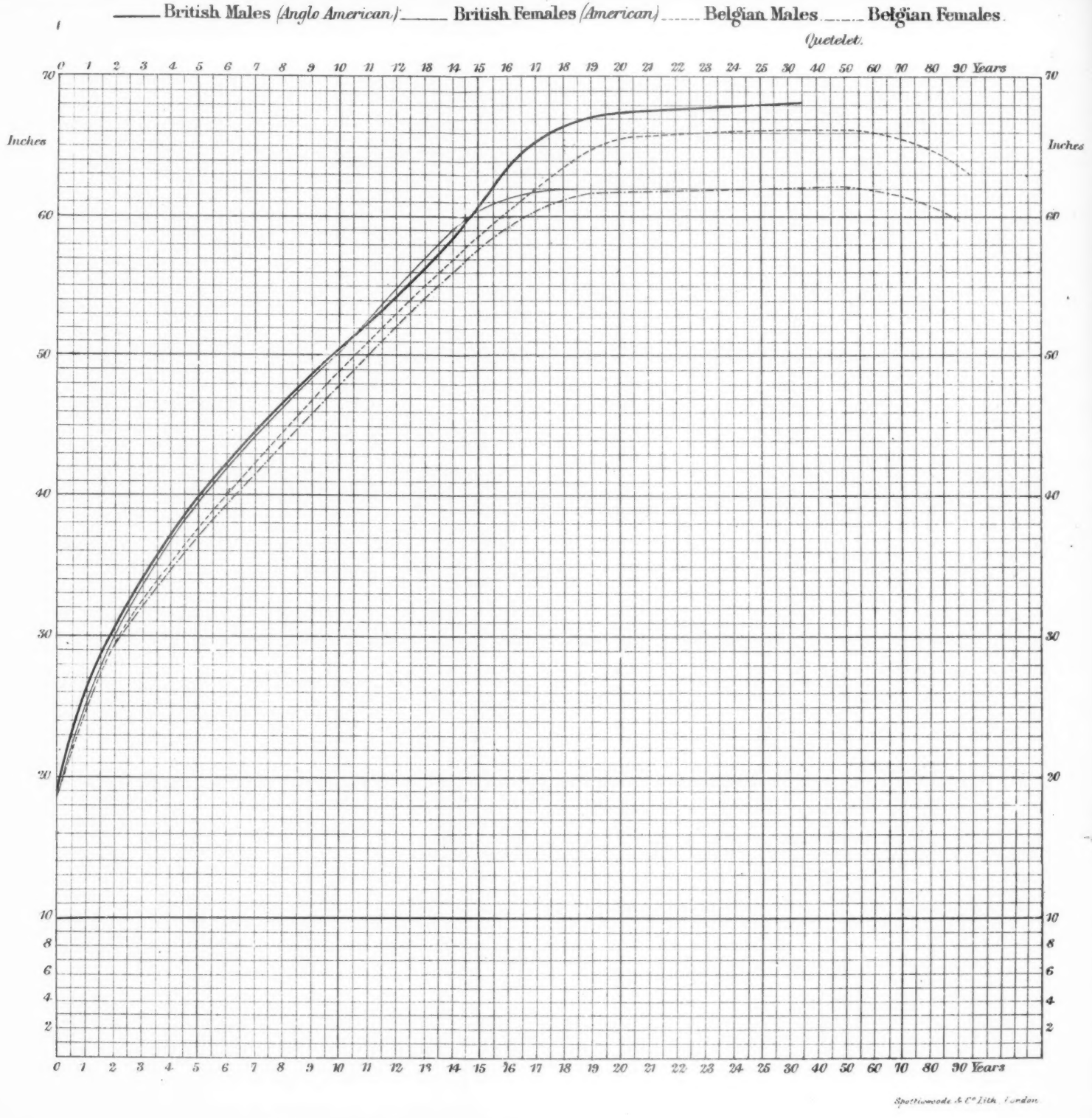
3. DIAGRAM SHOWING THE STATURE OF BRITISH AND BELGIANS OF BOTH SEXES.

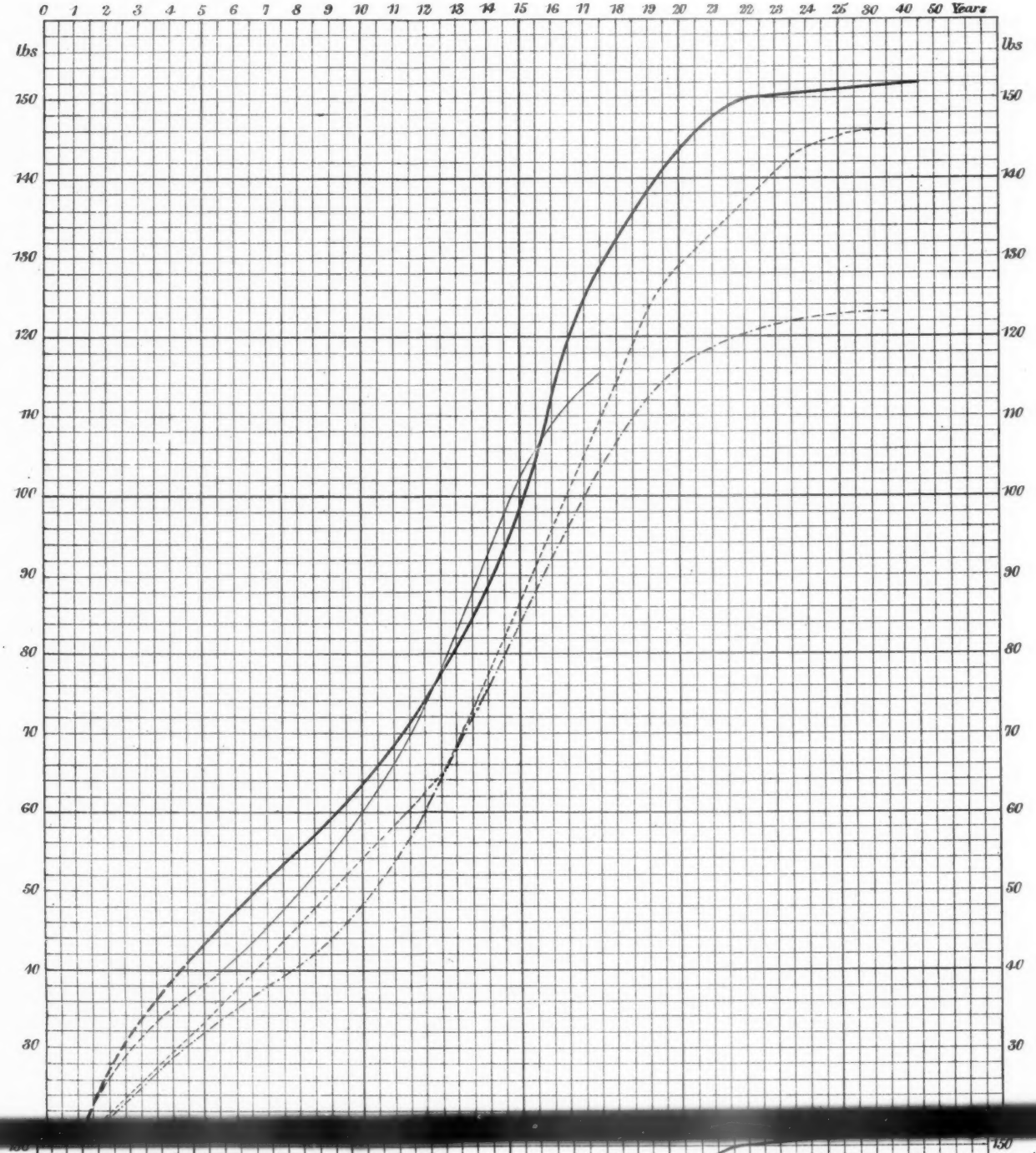


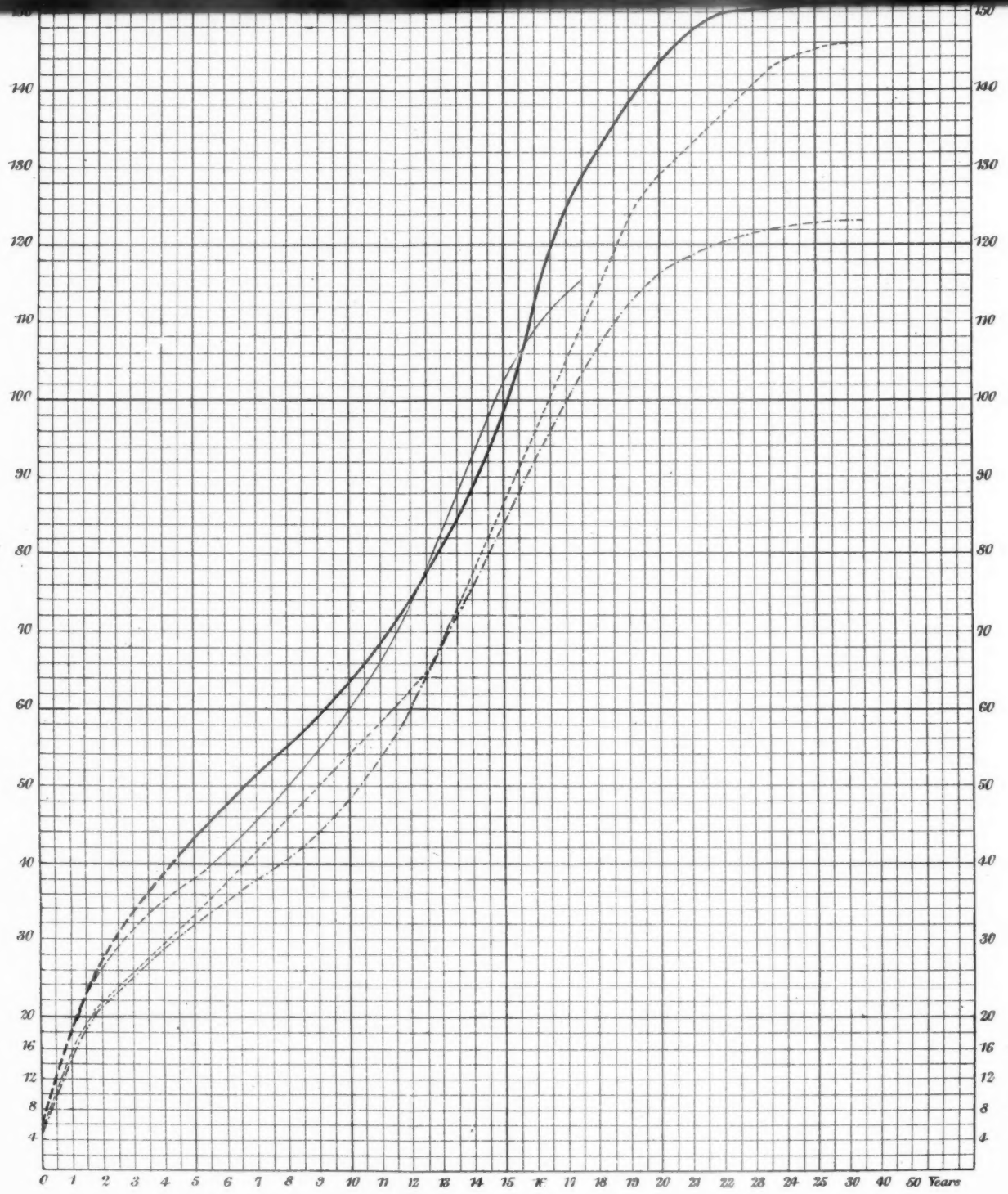


Illustrating the Report of the Anthropometric Committee.

4. DIAGRAM SHEWING THE WEIGHT OF BRITISH AND BELGIANS OF BOTH SEXES.

——— Anglo American Males ——— American Females ..... Belgium Males ..... Belgium Females.





Note. *The British weights include the Clothes. The Belgium weights probably exclude the Clothes.*

Illustrating the Report of the Anthropometric Committee.

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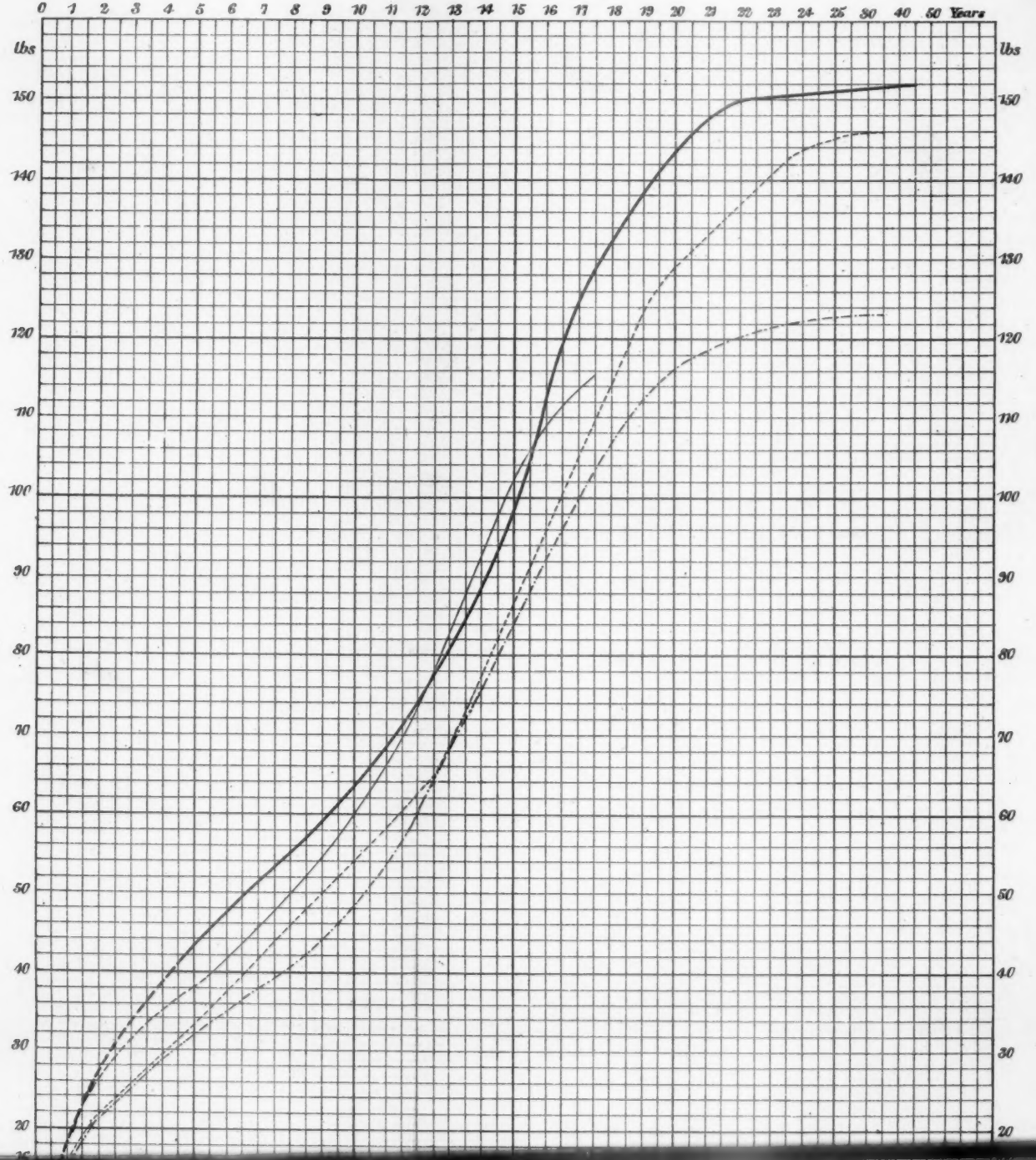
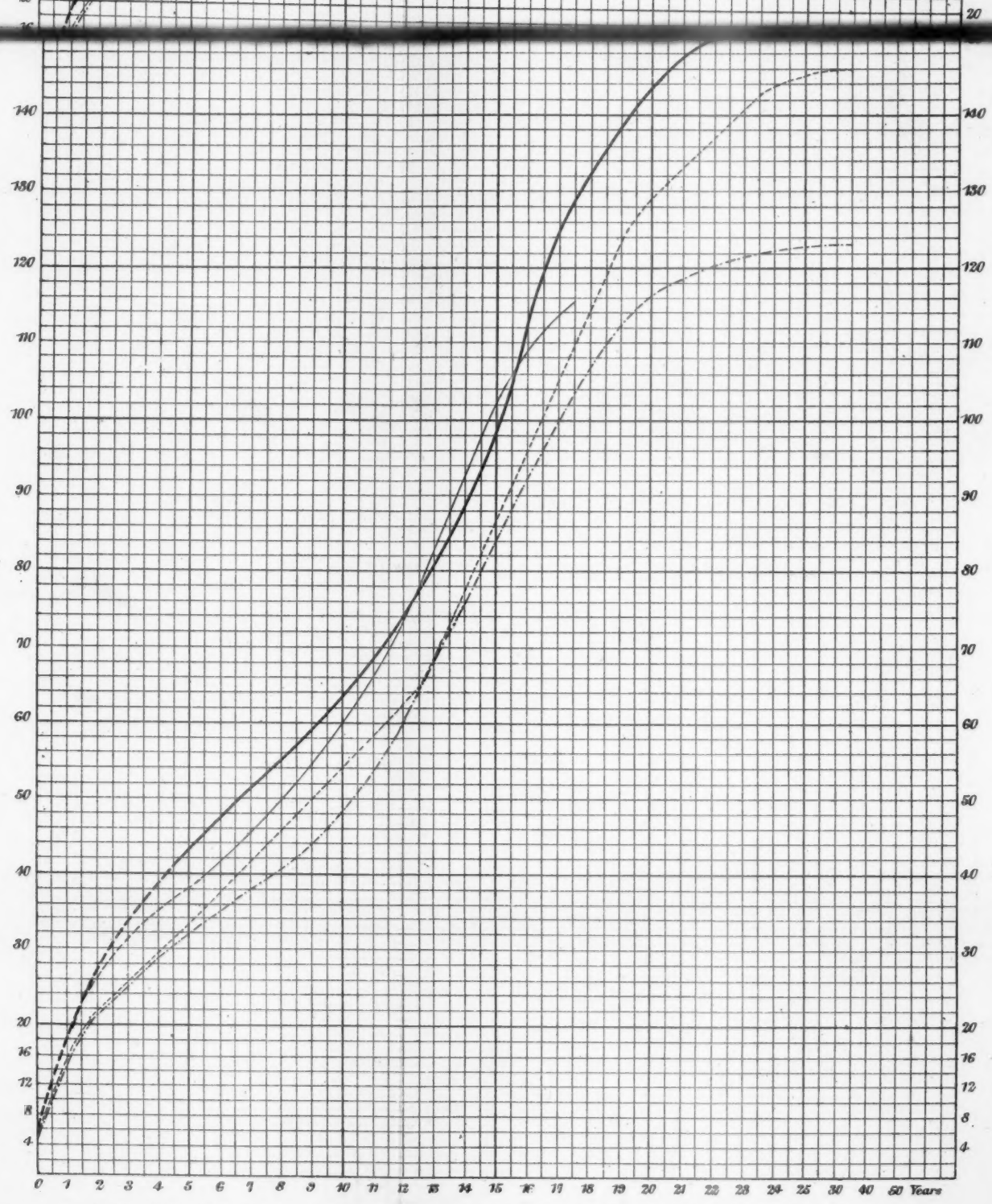
4. DIAGRAM SHEWING THE WEIGHT OF BRITISH AND BELGIANS OF BOTH SEXES.

——— Anglo American Males ——— American Females ..... Belgium Males ——— Belgium Females.





Note. *The British weights include the Clothes. The Belgium weights probably exclude the Clothes.*

Illustrating the Report of the Anthropometric Committee.

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ANTHROPOLOGICAL MISCELLANEA.

Extracts *from the* Report *of the* Anthropometric Committee *of the* British Association.

The Committee was appointed for the purpose of continuing the collection of observations on the systematic examination of heights, weights, &c., of human beings in the British Empire, and the publication of photographs of the typical races of the Empire.

Mr. Charles Roberts, F.R.C.S., a member of the Committee, whose "Manual of Anthropometry" is of the utmost value to inquirers, has furnished the Committee with a series of observations, illustrated by diagrams, and accompanied by remarks on the establishment of a standard of stature and weight.

"The accompanying charts show that the average height and weight varies with the social position and occupation of the people, and to obtain the typical proportions of the British race it would be necessary to measure a proportionate number of individuals of each class, or a community which comprised all the classes in the proportions in which they exist in the whole nation. If we take the census of 1871 we shall find that such a model community would consist of 14·82 per cent. of the professional class, 47·46 per cent. of the labouring class, and 37·72 per cent. of the artisan and operative classes. But as many trades are confined to certain districts it would be very difficult to find such a representative population in a limited space in this country. The nearest approach to one would be found in some of our larger county towns, such as York, Derby, or Exeter, with a large portion of the surrounding agricultural districts.

"As the statistics which I have collected in England represent various classes rather than the general population, I have arranged them in a double series—a most favoured class and a least favoured class—and I have adopted the average of the two extremes as typical of the English nation. The American statistics, with which I have compared my own, are very valuable, as they represent the general population of the United States. Dr. Bowditch's data were collected 'in nearly all the public (common) schools of the city of Boston, in several schools in South Boston, Roxbury, Charlestown, and Jamaica Plain; in the Institute of Technology, in two Latin schools, a school for young ladies, and in several public (common) schools in Brooklyn' ('On the Growth of Children,' 8th An. Rep. State Board of Health of Mass., 1877), and Dr. J. H. Baxter thus vouches for the representative character of

the statistics published by the United States Government:—'It should be borne in mind that this statistical matter does not relate to soldiers already in the service—picked men in nowise representing the masses—but to the people, the men engaged in every occupation; the professional man and the man of letters, the trader, the merchant, the clerk, the artisan and the unskilled labourer.' ('Statist. Med. and Anthrop.,' vol. i. p. 19.)

"The accompanying charts show the relation which exists between (1) the height and weight of the most favoured and the least favoured classes of the English population; (2) between the English and Americans of British origin; (3) between the two sexes of the British race; and (4) between the British and Belgian populations of both sexes.

"1. The height and weight of the English male population. (Chart tracing No. 1.)

From birth to the age of 6 or 7 years the statistical data are imperfect, but it is probable from the directions of the curves of growth that all classes of the English population are about the same in height and weight at this period. After the age of 8 years the curves diverge very rapidly, the divergence being due to a slower development of the labouring and artisan class.

"After 8 years the professional class exceeds the labouring and artisan class thus:

	Height. inches.	Weight. lbs.
At 8 years the Professional Class exceeds the Labouring and Artisan Class by	0·32	1·0
„ 10 years „ „ „ „	2·88	1·13
„ 12 „ „ „ „	3·98	6·65
„ 14 „ „ „ „	3·35	14·60
„ 16 and 17 years „ „	3·44	19·55
„ 18 „ 19 „ „ „	2·76	16·33
„ 20 „ 21 „ „ „	2·50	9·50
„ 25 to 30 „ „ „	2·11	9·15

"The greatest difference in height is at 12 years, when it amounts to about 4 inches; the greatest difference in weight is at 17–18 years, when it amounts to nearly 20 lbs. The full stature is attained earlier in the professional than the artisan class; in the former about the age of 21 years, and in the latter between 25 and 30 years. The American statistics show that a slight increase in height takes place up to the 35th year. The growth in weight does not cease with that of the stature, but continues slowly to increase in both classes up to about the 30th year.

"2. The relation between the height and weight of English-born and American-born subjects. (Chart tracing No. 2.)

"A comparison of the average stature of the English and American branches of the British race shows that they are nearly identical from the age of 4 years to the period of full growth, but the weights differ at the two ends of the curves.

"In stature, between the ages of 4 and 8 years the Americans exceed the English by rather less than half an inch; but this is, no

doubt, to be attributed to the fact that the English statistics during this period are derived entirely from our town population. From 9 to 15 years the stature of the two branches of our race is the same, and from 16 to 22 it is slightly in favour of the English. At adult life the Americans are a little taller than the English, but the number of the English observations after the age of 22 is not sufficient to determine this point accurately.

"In weight, from the age of 5 to 10 years the English exceed the Americans, but this is probably to be attributed to the greater weight of the clothes worn by the poorer classes in this country. At 12 the weight is equal; from 13 to 16 it is in favour of the Americans, from 17 to 19 of the English, and after 20 years of the Americans. The number of observations for each age after 16 years of the Americans are too few to be relied on.

"Mr. Gould and Dr. Baxter have shown that of the recruits for the American army those born of American parents are taller than those born of English parents, and it has been inferred that a change has taken place in the physical proportions of our race in that country. Dr. Baxter found the average stature of the American-born recruits, between the ages of 30 and 35 years, to be 68·22, the English-born 66·92, and the Irish-born 66·91 inches. But the difference in height is to be explained by the difference in the class from which the recruits were drawn. The English and Irish being emigrants from this country consisted almost entirely of the labouring and artisan class, which we find in this country has an average stature of 66·95 inches; while the American recruits were drawn from all classes of the community by conscription. The average height of all classes in England between the ages of 25 and 30 years is 68·00 inches, and of the corresponding ages in America 68·12 inches, and the slight advantage which the Americans possess is probably due to the very large number of observations (38,055) from which the average is drawn, compared with the very small number of the English (142).

"The averages of the stature and weight of the two great branches of the British race being so nearly alike, I have deduced from them a typical standard of height and weight for the whole British (Anglo-Saxon or Anglo-American) race. This standard does not consist of any one of the nationalities—English (and Welsh), Scotch, amd Irish—of which our race is composed, but of all three in various proportions. In my statistics the English predominate; in the American, Irish blood must be very largely represented, and there is a large admixture of the Scotch element in both. In order to distinguish the relative stature and weight of the three nationalities I have had recourse to the army returns of both countries.

"The English (and Welsh) recruits are shorter in stature than the Irish by 0·30 of an inch, and the Scotch by 0·44 of an inch; and the American recruits *born in Great Britain* are about half an inch shorter in stature than those of corresponding nationality in the English army.

"The Scotch recruits in Great Britain, though possessing the greatest stature, are lighter in weight than the English (and Welsh) by 3·3 lbs., and the Irish by 4·1 lbs., and the Irish are nearly 1 lb. heavier than the English.

"Lowering the standard of height from 66 inches in 1862–3 to 65 inches in 1864–5 lowered the average stature of the English by 0·17 inch, of the Scotch by 0·21 inch, and of the Irish by 0·25 inch; but there was an increase of weight in all three nationalities. In the Scotch it amounted to 6·7 lbs.

"It is probable that the stature of the English recruits is lowered by a large admixture of Welsh, and by the young musicians, who are almost entirely of English birth and often under the standard height.

"3. The relation between the height and weight of the two sexes of the British or Anglo-Saxon race. (Chart tracing No 3.)

"The statistics of the height and weight of females in England are very limited in extent (from 8 to 14 years of age), and refer only to the labouring and artisan class. As the average male population of England and America are so nearly identical, we may accept the measurements of American girls published by Dr. Bowditch as applicable to this country also. These were collected in the common schools in Boston and surrounding neighbourhood, under the same circumstances and at the same time as the males, and fairly represent the general population. The tracings are shown in diagrams 3 and 4. The observations at the time of birth are English, collected by myself, but all the remainder are American.

"At birth girls are about $\frac{1}{3}$rd of an inch shorter than boys, and from 1 to 4 there is a much wider difference, but the statistics are too few to determine the amount. From $5\frac{1}{2}$ to $10\frac{1}{2}$ the stature of the two sexes is nearly the same, the advantage being slightly in favour of the boys; but after the age of $11\frac{1}{2}$ and up to $14\frac{1}{2}$ years the girls are the tallest; at $12\frac{1}{2}$ the difference is 0·84, and at $13\frac{1}{2}$ 0·88 of an inch. From $15\frac{1}{2}$ to $18\frac{1}{2}$ the growth of the boys is much greater than that of the girls. At 15 the difference in favour of the boys is 1·06 inch; at 16, 3·02 inches; at 17, 4·10; and at 18, 4·85 inches, at which age the females probably attain their full stature. (Chart tracing No. 4.)

"In considering the weight of the two sexes, we find that at birth girls are $\frac{1}{3}$ lb. lighter in weight than boys; at 5 and 6 the difference amounts to about 6 lbs., but after the latter age the weights gradually approximate, and at 12 they are identical. From $12\frac{1}{2}$ to $15\frac{1}{2}$ the girls are heavier than the boys, the difference at $13\frac{1}{2}$ being 4·52 lbs., and at $14\frac{1}{2}$, 5·02 lbs. At $15\frac{1}{2}$ the weight of the two sexes is again identical, and after this period the excess is largely on the side of the boys; at $16\frac{1}{2}$ it is 7·73 lbs., at $17\frac{1}{2}$, 13·85 lbs., and at $18\frac{1}{2}$ 19·27 lbs.

"As M. Quetelet's tables are the only complete series of observations on the height and weight of both sexes, and at all ages, we possess, and as they have been generally accepted by anthropologists and physiologists as reliable standards, especially at ages below the

adult period of life, I have added his figures to my tables, and traced their relation to the British statistics on the diagrams 3 and 4, for the purpose of comparison. M. Quetelet does not state the number of observations on which his tables were based, but they were few ("peu considerable." "Anthrop." p. 182); and probably did not exceed ten individuals for each age ("Anthrop." p. 24); moreover, the measurements were made on persons "regularly formed," and therefore to a certain extent selected. It is necessary to bear these facts in mind in estimating the value of M. Quetelet's tables as standards of reference, and when comparing them with the English and American tables based on many hundreds of observations for each age. M. Quetelet does not state whether the values for each age are for the birthday or for the interval between two birthdays, and I have therefore arranged them like the British, as representing the age between two birthdays. This is important, as bearing on the absolute height and weight, but not on the curves of growth. In the tracings on diagrams 3 and 4 the lines representing the Belgians would be one division of the scale nearer to the lines representing the English if the figures represent the birthdays, but the relative position of the various curves would remain the same. If M. Quetelet's figures represent the heights and weights of the birthdays exactly, there is a difference of half a year in favour of the British at all ages after that of birth.

"The curves show that growth in height is greater in the British from birth to 5 years than in the Belgians. From 6 to 12 years the curves approximate, and the difference is two-thirds less than it was at 5 years of age. From 13 to 17 years the growth of the British is much more rapid than that of the Belgians, the difference in stature at the latter age being about four times greater than it is at 12 years. At adult life the difference in height of the males of the two countries is nearly 2 inches, while the height of the females is the same in both. The most marked differences in the height of the two peoples is found in the relation of the two sexes, the British girls being taller than boys from 11 to 14 years, while the Belgian females are shorter than the males throughout their lives.

"The curves of the weight of the body of the two countries are very similar, except that the weight of the British girls from 12 to 15 is greater than the boys of the same ages, whereas the weights of the Belgians of both sexes are the same at 12, but at all other ages the females are lighter than the males.

"The differences between British and Belgian statistics cannot be attributed to differences in race as they are not uniform throughout, and we must consider M. Quetelet's tables, based as they are on so small a number of observations, rather as approximations or estimates of the stature and weight of his countrymen. The difference in the height and weight of the sexes, which was first pointed out by Dr. Bowditch ("Boston Med. and Surg. Journal," 1872), has quite escaped the notice of M. Quetelet, although he has published some British statistics which demonstrate its existence, and it has been confirmed by all the statistics which have been col-

lected since. The difference is due to the more rapid growth and the attainment of maturity at an earlier age of females than males, for we find that the curve representing females between the age of $11\frac{1}{2}$ to $18\frac{1}{2}$ is almost identical with the curve representing males between the age of $14\frac{1}{2}$ and $21\frac{1}{2}$ years, these two periods corresponding with each other in the physical development of the two sexes. It is probable that the curve representing males from 11 to 14 years is depressed a little by school life and the earlier occupation of boys than girls, but the chief difference is obviously attributable to the quicker development of girls, as it is found to exist in all classes of the community. The large number of observations included in my tables show that the difference is constant, and it must therefore be accepted as a fact essential to the proper study of the growth of civilised races, no matter from what cause it may arise."

The attention of the Committee has been directed to the progress of anthropometric research in other countries. The "Annals of Statistics" for 1878, published by the Minister of Agriculture, Industry, and Commerce of Italy, has two anthropometric papers of considerable interest directly bearing on the subject of this Committee's inquiry. The first is by Dr. L. Pagliani on the development of the human body. Referring to his work "Sopra alcuni fattori dello sviluppo umano," to Dr. Bowditch's investigations as to the growth of children, and to "Die Entwickelung des Menschen in den der Geschlecht-reife vorhergehenden spätern Kinderjahren und im Jünglingsalter (von 7 bis 20 Jahren) in Verhältniss zum Geschlecht, zur Ethnographie und zu der Nahrung und Lebens Beingungen in Moleschott's Untersuchungen zur Naturlehre des Mensehen und der Thiere," Dr. Pagliani shows, up to 10 years of age, the stature and weight of children of both sexes present but little difference, though they are always in favour of boys; that from 10 to 15 years of age the difference becomes greater, and is always in favour of girls; and that after 15 the boys reassert their superiority, and are found to be taller and heavier. Dr. Pagliani further shows that the economic condition of the child has much influence on his or her weight and stature. In weight and stature alike the children of the labouring classes stand lower than the children of the well-to-do classes. This is the result of a considerable number of observations in Turin, and is fully borne out by the diagram which accompanies the memoir. Signor Cesare Lombioso, in his paper "On the Anthropometry of the Lucchesia and Garfagnana," endeavours to prove from the high stature, black hair, formation of the head, tending to the dolichocephalic, or head of the African type, *i.e.*, one with its diameter from side to side notably shorter than the diameter from front to back, the opposite to brachycephalic, and from other distinctive characteristics, that the people of those States come from the old Etruscan race. Both memoirs illustrate in a conspicuous manner the utility and importance of the inquiry which this Committee has undertaken to institute. M. Quetelet's work upon Man ("Sur l'homme et le développement de ses facultés") is well known.

But at this moment extensive inquiries in the same direction are being made in Germany, the United States, and other countries. Recent political events, moreover, have imparted a fresh interest on questions of races, and if we are able to extend our researches over all the portions of the British Empire, the home of so many races, we may contribute largely to the amount of general knowledge on the physical and intellectual powers of man.*

Professor Bowditch, of Massachusetts, has published a supplementary investigation of the growth of children, with suggestions in regard to methods of research, in the 10th Annual Report of the State Board of Health (Boston, 1879). His object was to ascertain whether differences of race or differences in the mode of life affect the rate of growth the more profoundly. The general conclusion he arrives at is that mode of life, as indicated by the occupation of the parents, is equally important with race in determining the rate of children. In his remarks on Anthropometrical methods, Dr. Bowditch reprints, with approval, the forms and instructions which have been issued by this Committee, and recommends the chart prepared by Mr. Roberts. He also advises the use of the card system, extensively adopted in Germany, in which the facts relating to every single person are collected upon a card, which can be combined with other cards in any number of ways, according to the nature of the facts desired to be grouped together. This plan the Committee have resolved to adopt wherever it can conveniently be applied, and a form of card has been drawn up for use by the head-masters of public schools.

A special inquiry has recently been instituted in almost every primary school throughout Switzerland, at the instance of a Committee of the Société des Sciences Naturelles, for the purpose of ascertaining the distribution of the different colours of the iris, hair, and skin, as connected with the settlement of the aboriginal races in that country.

The coincidence of these several inquiries with that undertaken by this Committee is exceedingly interesting, and leads to the hope that, from all those various sources, information of great value may in due course be elicited.

Dr. Beddoe, F.R.S., chose for the subject of his presidential address to the Bath and Bristol Branch of the British Medical Association last year, "The Progress of Public Health in our Own Times," which he treated from the statistical rather than the sanitarian point of view. The generation since 1838, when our registration system was founded, has seen great material and economic changes, the most important being those which have contributed to the increase of town population and the diminution of rural population. The mischiefs this aggregation tends to cause have been largely met by sanitary and philanthropic measures; though all the changes in the method and plan of building habitations have not been for the

* Communicated by Professor Leone Levi.

better. Forty years ago it was believed, perhaps wrongly, that the expectation of life was higher in England than in any other country. It certainly is not so now. The death-rate for the four years 1873 to 1876 was in England 21·8 per thousand, which exceeds the death-rate in Norway, Sweden, Denmark, and Belgium. The death-rates in New Zealand, Australia, and Tasmania are considerably lower than here, showing that the race is capable of better things under better conditions. Though the collection of people into cities increases the mortality, it by no means follows that the larger the town the worse will be the death-rate. Thus, in Scotland, the eight "principal towns" have a death-rate lower than the towns with from 10,000 to 25,000 inhabitants. The leading cause of this is doubtless the centripetal attraction of capital, energy, intellect and medical skill towards the largest towns. The excess of births over deaths is greatest in mining and metal-working towns and villages; and thus these unlovely regions, whence sweetness and light are banished, are the breeding grounds of the coming generation of Englishmen. The seasonal variations of mortality show maxima in January and July, minima in June and October for London; for Europe in general, the worst season seems to be the spring; for Iceland, the summer. Whether the public health in Great Britain, as measured by death-rate, has improved during the past 40 years, admits of doubt: that it has deteriorated in the northern part of the island scarcely admits of any. That the condition of women has improved relatively to that of men is perfectly clear. Deaths in infancy have increased. Men have a tendency to break down earlier than they used to do. Apoplexy and paralysis have increased. Phthisis has diminished as a registered cause of death, but bronchitis has enormously increased, owing chiefly to the extension of towns, and the growing defilement of the air. Many of the conditions of life that surround us are unfavourable; but some of them may be modified, and to others we may learn how better to adapt ourselves or to offer resistance. Working with these aims we may not, indeed, live to see Hygeiopolis, but we may attain such a measure of improvement as we may be able to regard with satisfaction and thankfulness.